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# USSR Report

AGRICULTURE

No. 1336

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8 July 1982

## USSR REPORT

## AGRICULTURE

No. 1336

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### REPORT ON SPRING FIELD WORK IN KRASNODARSKIY KRAY

Moscow TRUD in Russian 14 Apr 82 p 1

/Article by L. Kramarenko, Krasnodarskiy Kray: "Sowing Time Is Precious"/

/Text/ The front of field work is expanding on farms in Krasnodarskiy Kray. At present kolkhozes and sovkhoses in the Kuban' have completed the topdressing of winter crops on the entire area of 1,800,000 hectares.

Spring crops are being sown in all rayons. According to the data of the USSR Ministry of Agriculture, by 13 April spring crops were sown on almost  $\frac{1}{2}$  million hectares, including grain crops, on 160,000 hectares. About 1 million hectares were prepared for sowing. Field work is picking up speed every day.

The arrival of spring in the Kuban' was delayed for a long time. However, waiting for the warm weather, the kray's rural workers did not waste time.

Organic and mineral fertilizers were carted out to fields everywhere and winter crops were topdressed with mineral fertilizers with the help of agricultural aviation. Tens of thousands of tractors and more than 100,000 plows, seeders and cultivators were repaired and prepared for spring field work in the shops of farms and the Agricultural Equipment Association. The fall field was plowed and standard seeds were procured in the fall. Tens of thousands of machine operators improved their skills and mastered their new specialty for the first time.

When the number of sunny days increased considerably in the kray's southern rayons, field work expanded wherever the soil became warm and dry. Farmers in Abinskiy, Anapskiy, Krymskiy, Slavyanskiy and Temryukskiy Rayons took advantage of the first rise in temperature. The sowing of oats, barley, green peas and perennial grass was begun there. Early spring crops are now being sown everywhere.

About 2 million hectares are now allocated for spring crops in the kray. Grain growers are doing everything to finish sowing in a short time and in a high-quality manner and to create a reliable basis for the future harvest.

This year field work is noted for serious innovations. Corn, sugar beets, sunflower seeds and soybeans will be sown according to industrial technology on 400,000 hectares. Creatively utilizing the Ipatovo method, the kray's farmers pay special attention to the quality of all work and to a more intensive utilization of agricultural equipment.

The people of the Kuban' wrote the following in their socialist obligations: To obtain 35 to 36 quintals of grain per hectare and to sell 4.25 million tons to the state.

This is not an easy task. However, the farmers of the Kuban' are fully resolved to fulfill their socialist obligations--to give the homeland a heavy round loaf.

11,439

CSO: 1824/331

## MAJOR CROP PROGRESS AND WEATHER REPORTING

### REPORT ON SPRING FIELD WORK IN KURGANSKAYA OBLAST

Moscow SEL'SKAYA ZHIZN' in Russian 6 May 82 p 1

/Article by I. Shevchenko, Kurganskaya Oblast/

/Excerpts/ This year farmers in Kurganskaya Oblast intend to attain a considerable rise in the standard of farming in order to respond with action to the party and government concern for the development of agriculture in the country's eastern regions. There are sufficient harrows, cultivators, stubble breakers and seeders for an exemplary performance of spring work. There are tractors, motor vehicles and excellent seeds and mineral fertilizers have been delivered. A total of 7.2 million tons of organic fertilizers have been supplied to fields. Machine operators and specialists have been retrained well.

The weather is still favorable. Despite the late spring, the total above-freezing temperature at the end of April exceeded the average long-term indicators three- to four-fold. This means that the weeds that have appeared early can be removed by means of presowing cultivation. Furthermore, in the last few years, including now, grain growers have been sowing grain and pulse crops during two periods--immediately after moisture retention, as soon as the physical ripening of soil permits, and from the middle of May.

In the oblast's eastern steppe rayons, where solonets soil occurs frequently, preference is given to stubble seeders with reequipped shares for the broadcast sowing of seeds. On the Rechnovskoye Experimental Model Farm in Lebyazh'yevskiy Rayon solonets spots are additionally prepared for sowing. In such a case they yield a high-grade harvest.

Many other technological findings contributing to an increase in the productivity of a hectare have appeared in the course of field work. Among the most important it is possible to include measures for an increase in feed production. The areas sown with corn, root crops and leguminous and cereal grass are being expanded.

For two decades in succession before important economic campaigns the most skilled and experienced farmers gather at the oblast party committee. They hold a frank discussion of shortcomings and develop a strategy and tactics of work. This spring was no exception. The council of veterans of labor has become available to all the oblast's grain growers and, undoubtedly, will help to more fully utilize internal potentials for the production of a high harvest.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### RYAZANSKAYA OBLAST SPRING FIELD WORK, PLANS REVIEWED

Moscow SOVETSKAYA ROSSIYA in Russian 2 Apr 82 p 1

[Article by V. Kolobov, Ryazan': "Prepared for Sowing"]

[Text] "The farmers in Ryazanskaya Oblast" stated the chief of the oblast agricultural administration V.R. Zavrazhin, "have every reason to expect a good harvest this year. First of all the autumn plowing was carried out fully. The winter crops were sown on schedule and they appear to be progressing in a normal manner at the present time."

I believe that the applications of organic fertilizer to the soil are better than those of last year. And we are continuing to carry out such applications. March was declared to be a month devoted to moving peat and farmyard manure out onto the fields. This work will be increased by one and a half times above that for last year in behalf of this year's harvest. Moreover, the farms are applying the organic fertilizer in a prepared form -- composts. We have tasked each farm with installing a clamping site. The Rossiya Kolkhoz in Starozhilovskiy Rayon has already moved approximately 20,000 tons of compost out onto the fields. This work is being carried out in an efficient manner by the Alekseyevskiy and Makeyevskiy Sovkhozes in Klepikovskiy Rayon and by many others. Beyond any doubt, much more work could be carried out in this regard. The weak technical base of the Oblsel'khozkhimiya Association precludes the possibility of satisfying the needs of all of the farms. The fertility detachments, created by the kolkhozes and sovkhozes themselves, are not always fully staffed. Nor are we satisfied with the work being performed by the Ryazan'melioratsiya Association. Not all of its subunits are coping with the plan for preparing peat bogs for operation.

The specialists inspected the winter crops. Despite the complicated nature of this year's weather, the winter sowings appear to have emerged in fine condition. But as the saying goes, trust in God and make no mistakes.

Today and tomorrow the farms will commence applying a top dressing to the winter crops. The decision has been made to carry out this work over large areas using the root method.

Much will depend upon the sowing work -- upon the sowing periods and upon how well the work is carried out. This in turn imposes a requirement for the proper preparation of the personnel, equipment and seed. Approximately 500 sowing complexes have been created in the oblast. The structures of the mechanized teams

for the raising of grain crops, beets, corn and potatoes have been approved. This year we are devoting special attention to forage crops. Mechanized teams will be responsible for them. The sowing equipment has been readied for operations. The situation is somewhat worse with regard to repairs being carried out on the powerful K-700 and T-150 tractors. The Oblsel'khoztekhnika Association is causing a delay to take place: there is a shortage of spare parts.

The farms have been fully supplied with seed. The state has furnished a great amount of assistance. All of the seed has been improved to a high sowing condition and the chemical disinfection of the seed has just commenced.

In short, we will move out onto the field just as soon as the land calls us.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### SEED PRODUCTION PROBLEMS IN KOSTROMSKAYA OBLAST DISCUSSED

Moscow SEL'SKAYA ZHIZN' in Russian 6 Apr 82 p 1

/Article by N. Karaseva, chairman of a people's control group at the Andreyevskiy Kolkhoz in Susaninskiy Rayon; K. Kazakov, tractor operator at the Vpered Kolkhoz in Ostrovskiy Rayon; T. Filippova, agronomist for the oblast association of Kostromasortsemprom; B. Svishchev, SEL'SKAYA ZHIZN' correspondent, Kostromskaya Oblast: "What Will the Agronomist Sow?"

/Excerpts/ This year the farms in Kostromskiy and Krasnosel'skiy Rayons will use only high quality seed in carrying out their spring sowing of grain crops. Roughly 92-93 percent of the seed held by the farmers in Galichskiy, Sudislavskiy and Manturovskiy Rayons is certified. Yes and for the oblast on the whole the seed this year is somewhat better than that which was available in the spring of 1981: 10,000 more tons of certified seed have been procured.

At the same time, we must not flatter ourselves too much with the above statistic. since the quality of the grain seed by no means conforms to the requirements of the times. As yet, one out of every five tons of seed on the farms is uncertified in terms of purity or germinative capacity and only one fourth meets the norms for 1st or 2d class of the sowing standard. In all, there are only 4-10 tons of 1st class seed available to kolkhozes and sovkhoses in Neyskiy, Pyshchugskiy, Makar'yevskiy and Ponazyrevskiy Rayons.

It can be stated directly: the references being made by some leaders and specialists to the difficulties experienced last season are not convincing. Quite to the contrary, the Kostroma workers have not taken full advantage of the very favorable conditions available to them this year for preparing their seed in a fine manner. Actually, this year the plan for the spring sowing of grain crops in Kostromskaya Oblast was lowered by 50,000 hectares. It would appear that the requirement for seed had been reduced sharply and that all effort should be directed towards improving the seed to the best sowing condition. However, another tactic was employed. On a number of farms, after seeing how the "percentage" of certified seed was increased artificially, the decision was made not to speed up the processing of the seed in view of the fact that in previous years they never had such good quality seed.

Susaninskiy Rayon occupies sixth place in the oblast in terms of the availability of certified seed and with regard to 1st and 2d class seed -- last place. The rayon's agronomic service is obviously satisfied with the fact that the farmers on



farms will sow 3d class seed, that only 2 to 9 percent of the seed at the kolkhozes Andreyevskiy, imeni Lenin and Voskhod and at the sovkhoses Yakhnobil'skiy, Grigorovskiy, Susaninskiy and Medvedki is of 1st or 2d class quality, that the Kolkhoz imeni Kalinin has no such seed whatsoever or that more than 100 additional tons of grain remain to be sorted at four farms. First class seed is lacking even at two specialized farms of the oblast association Kostromasortsemprom, facilities which have an incomparably better production base than do rank and file farms. And there can be only one reason for such poor seed preparation -- mismanagement.

The responsibility for this must rest with the agronomic service. Indeed, there are approximately 17,700 tons of non-standardized seed in the oblast and yet the preparation of this seed has still not been organized. Not one agronomist has been reproached for this poor work, not to mention the possibility of more serious punishment. Some specialists are even convinced that it is practically impossible to improve the quality of the seed, since it is already too late to sort out the wild radish and crop impurities.

It is always easier to justify a situation than it is to organize one's work and labor. An explanation can be offered for any type of delay in one's work and yet explanations alone will not guarantee a good harvest.

"Yes, we have no basis for boasting about our seed" agreed the deputy chief of the oblast's agricultural administration V.V. Nabatov, "we are undertaking measures aimed at substantially correcting the situation."

Certainly, objective factors are certainly hindering the grain growers from carrying out their work. As a result of last year's drought, the grain turned out to be small and imperfect. Many shortcomings still persist in the work being carried out at grain cleaning complexes and there is a shortage of sorting machines. So few of them are being received in the rayons that the new units are unable to meet the requirements of the kolkhozes and sovkhoses. Yes and there is a shortage of spare parts with which to repair these machines in almost all of the oblast's zones.

The Kostroma workers are growing grain crops in four natural zones, with practically the same varieties being employed. The farmers are obviously justified in expecting the scientists to provide them with new varieties which are more suitable for the conditions found in the kray.

There are also other factors which detract from the final result in seed production. But nevertheless there are many more purely economic miscalculations still occurring at the kolkhozes and sovkhoses. And by no means can they be tolerated. The fate of this year's harvest is greatly dependent upon the quality of the seed. This must be remembered by each agronomist and each grain grower.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### SOIL IMPROVEMENT WORK IN BRYANSKAYA OBLAST

Moscow SEL'SKAYA ZHIZN' in Russian 11 Mar 82 p 1

[Article by A. Glazkov, Bryanskaya Oblast: "For Improved Fertility"]

[Text] In preparing for spring, the Bryansk farmers have laid away sufficient quantities of seed for their spring grain crops and potatoes, they are ahead of schedule in repairing their equipment and they are improving the fertility of their soil. Great importance is attached to solving this task: only in ten out of twenty-four rayons is the humus content close to optimum.

During the Tenth Five-Year Plan, 7.3 tons of organic fertilizer were applied per hectare of arable land. Nevertheless, this is a small amount. This is why the plans for this year call for no less than 10 tons of organic fertilizer to be applied per hectare of arable land. This tense task has required a change in the work organization for the fertility detachments and a strengthening of these detachments.

In Vygonichskiy Rayon, small and weakly equipped detachments have been converted into inter-farm units, with each having an adequate supply of equipment. For example, the detachment for the Vygonichskiy, Uruch'ye, Desna and Sosnovskiy Sovkhozes has five loaders, two bulldozers and approximately 30 units of transport equipment. During a day's time the machine operators compost 600-700 tons of farmyard manure and peat. In all, the amount of compost procured thus far exceeds by more than twofold the amount procured in behalf of last year's harvest. A considerable portion of the organic material is being applied to remote tracts which have not received local fertilizers over a period of many years.

By way of displaying concern for raising the fertility of the soil, a carry-over peat fund was created at the Avangard Kolkhoz in Starodubskiy during the summer. It is used as bedding for the animals in the livestock yards, with peat and farmyard manure composts being prepared the year-round. More than 30,000 tons -- 15 tons for each hectare of arable land -- have been laid away in behalf of this year's harvest.

It is gratifying to note some improvements in backward rayons.

For example, there is the remote Mglinskiy Rayon, which for a long period of time was numbered among the backward rayons. The residents of villages and towns located on the territory of the Sokolovskiy Sovkhoz vowed to move 1,200 tons of

farmyard manure from the livestock yards out onto the fields. The sovkhos's fertility detachment is employing its equipment in an efficient manner. More than 5 tons of compost have already been laid away for each hectare of arable land. Never before has such a quantity of compost been procured in the rayon.

In Krasnogorskiy Rayon there are fertility detachments which carried out raised seasonal obligations. For example, the machine operators at the Pravda Sovkhoz procured approximately 45,000 tons of peat and farmyard manure against a plan calling for only 40,000 tons. A generous amount of fertilizer is being applied to the soil at the Krasnyy Oktyabr' Sovkhoz in Starodubskiy Rayon. No less than 100 tons of compost are being applied to each hectare in behalf of the potato crop here. The farms in Novozybkovski Rayon are maintaining a good state of fertility on sandy soils.

Each year, more than 20 tons of peat and farmyard manure per hectare are being plowed under at the Komsomolets, imeni Zhdanov, Reshitel'nyy and Kommunist kolkhozes and at the Volna revolyutsii Experimental Farm. Here the fertility detachments operate during both the summer and winter. This year the workers in Novozybkovski Rayon are again moving organic fertilizer out onto the fields at a high tempo.

Many such examples could be cited. They underscore the desire on the part of workers in Bryansk villages to establish a strong foundation for obtaining high yields for their grain, forage, potato and vegetable crops.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### BRIEFS

SOWING IN DON AREA--Rostov-on-Don, 30 Apr--Overcoming the difficulties of the unstable weather, Don's farmers are sowing spring crops on a wide front. They now occupy over 1.3 million hectares, or 346,000 hectares more than on this date last year. Almost on the entire area spring crops are sown with a simultaneous introduction of mineral fertilizers. Completing the sowing of early grain and pulse crops, kolkhozes and sovkhoses have begun the sowing of sunflower seeds and corn. These crops have already been placed on several tens of thousands of hectares. Zernogradskiy, Kagal'nitskiy, Azovskiy and other southern rayons have begun the performance of work on cultivated fields according to industrial technology. A total of 220,000 hectares of corn for grain, 50,000 hectares of sunflower seeds and 20,000 hectares of soybeans will be cultivated by such a method in the oblast this year. As a result of the introduction of advanced technologies and the experience of advanced workers, plans are made to increase the production of corn grain to 1 million tons, as well as to raise the output of soybeans and sunflower seeds considerably. /By Yu. Maksimenko/ /Excerpts/ /Moscow SEL'SKAYA ZHIZN' in Russian 1 May 82 p 1/ 11,439

MOISTURE RETENTION--Ul'yanovsk, 7 May--Abundant rain fell in the Central Volga and the rates of field work are increasing every day. In 72 hours kolkhozes and sovkhoses in Starokulatkinskiy Rayon retained moisture in soil and expanded the sowing of early grain and pulse crops and sunflower seeds. The sowing of spring wheat also expanded on farms in Tsil'ninskiy Rayon. Kolkhozes and sovkhoses are sowing annual grass and corn, whose seeds have undergone hydrophobization. /By M. Belousov/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 8 May 82 p 1/ 11,439

ORGANIC FERTILIZERS--Kuybyshevskaya Oblast--The trans-Volga steppe has come to life. Not wasting precious time, machine operators are moving units to fields. Farmers in Kuybyshevskaya Oblast set for themselves a difficult task, that is, to increase gross grain production to 3.6 million tons and to gather almost 3 quintals of grain per hectare more than during the 10th Five-Year Plan. Grain growers in Kuybyshevskaya Oblast now lean not only on the help of the large-scale chemical industry. More local fertilizers than last year were delivered for the spring wedge. A great deal will also be applied to fallow, which now occupies 10 percent of the arable land. However, by no means all organic fertilizers will be used. Every year about 2 million tons of organic fertilizers, or almost one-fourth, remain undelivered. This powerful fertility potential is especially poorly utilized in Sergiyevskiy and Shentalinskiy Rayons. It is still spring, but rural workers are already thinking about the forthcoming harvesting campaign. Work on the fulfillment of the recently

issued decree of the CPSU Central Committee and the USSR Council of Ministers "On Additional Measures To Ensure the Gathering of the Harvest and the Procurement of Agricultural Products in 1982 and To Successfully Carry out the Wintering of Live-stock During the 1982/83 Period" is expanding in the oblast. /By V. Shalgunov/ /Excerpts/ /Moscow PRAVDA in Russian 4 May 82 p 1/ 11,439

CORN GROWING--A very difficult task, that is, to obtain 1 million tons of corn grain, was set for Don's farmers this year. A gamble was taken on the industrial technology of crop cultivation and the link organization of labor with payment based on the end result. The experience of the best corn growing collectives confirms the correctness of this calculation. This year corn will be cultivated according to industrial technology on 220,000 hectares. In practice, all the sown areas in the oblast are assigned to links. A total of 80 such collectives undertook the obligation to obtain no less than 100 quintals of corn grain per hectare. /By V. Konovalov/ /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 6 May 82 p 1/ 11,439

SELECTIVE HARROWING--Don's machine operators have begun moisture retention in soil and selective harrowing. The capricious spring--with frosts and pouring fall rain--delayed the beginning of field work by almost ½ month. All this time farmers kept equipment in readiness and controlled the condition of fields. As soon as the warm wind dispersed the rain clouds, machine operators in grain growing rayons--Sal'skiy, Zernogradskiy, Tselinskiy and Yegorlykskiy--having grouped equipment on the fields that dried up, cultivated the first 150,000 hectares in 24 hours. In the fight for a high harvest of the anniversary year the object of Don's farmers is to maximally retain the moisture accumulated in the earth during the winter unusually snowy for local places. Moldboardless soil cultivation and packing are used widely. The equipment of overall detachments was grouped so that spring sowing could begin and be carried out in an optimum time--in 80 to 100 work hours. /Text/ /Moscow KRASNAYA ZVEZDA in Russian 4 May 82 p 1/ 11,439

AERIAL TOPDRESSING--The subdivisions of agricultural aviation on farms in the Central Volga began the aerial mass topdressing of winter crops. To ensure a prompt application of fertilizers, crews of the Tajik and Kazakh administrations of civil aviation came to the assistance of the people of Kuybyshevskaya Oblast. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 18, Apr 82 p 3/ 11,439

MECHANIZED DETACHMENTS--Farmers in North Osetiya began corn sowing. More than 60 mechanized detachments went out to fields. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 18, Apr 82 p 3/ 11,439

THOROUGH SOIL PREPARATION--Tractors, cultivators and fertilizer spreaders have been moved out onto the fields in the western and southern rayons of Bryanskaya Oblast. Thorough soil preparation has commenced in behalf of the spring crops and potatoes, a top dressing is being applied to the winter crops in all areas and sowing operations have commenced on some kolkhozes and sovkhoses. Tractor operator V. Gerasimenko at the Volna Revolyutsiya Experimental Farm in Novosybkovskiy Rayon sowed 40 hectares of oats in just one day. Tractor operator V. Yanchenko plowed 11.5 hectares a day compared to a norm calling for just 6.4 hectares. /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 10 Apr 82 p 1/ 7026

AERIAL TOP DRESSING FOR WINTER CROPS--Furmanov (Ivanovskaya Oblast)--The Ivanovo aviators have commenced applying a top dressing to the winter crops. This year they must apply mineral fertilizer from the air to an area of 120,000 hectares. This is 20,000 more hectares than last year. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 9 Apr 82 p 1/ 7026

EARLY SOWING OF CORN--Ivanovo--The sowing of corn in Ivanovskaya Oblast began considerably earlier than usual. This was caused not so much by the weather conditions as it was by the use of a progressive technology for the cultivation of this crop. Acting upon the advice of scientists, the seed was subjected to water-repellency treatment. The seed, wrapped in a polymer coating, has no fear either of the cold or spring mildew in the soil. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 7 May 82 p 1/ 7026

PERENNIAL GRASS SOWINGS INCREASED--Ryazan', 29 Mar--The machine operators at the kolkhozes imeni Lenin, Zavety Il'ich and Put' K Kommunizmu in Kasimovskiy Rayon were the first to move their sowing units out onto the fields. Not waiting for the snow to disappear completely from the fields, they began sowing their clover on level areas under a winter crop cover. The experience of past years indicates that such an arrangement for perennial grasses produces fine results: early and uniform seedlings are obtained which ensure 35-40 quintals of hay per hectare during the second year. This year the Kasimovskiy Rayon farmers are expanding their perennial grass fields from 6,500 to 10,000 hectares. Mass applications of top dressings to the winter crops have commenced in the southern regions of the oblast. Extensive use is being made of aviation and ground equipment. Top dressings must be applied to 405,000 hectares of winter grain crops -- 90,000 more hectares than in past years. /by A. Zholobov/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 30 Mar 82 p 1/ 7026

SPRING FIELD WORK PREPARATIONS--Ryazanskaya Oblast--In many regions of the country, this present January has been characterized by abundant snowfall and strong snowstorms. But this only pleases the farmers. There is a saying -- snow on the fields means grain in the granaries. Although winter's end is still a long way off, the agricultural workers are already displaying concern for the spring work. They are directing their efforts towards the organized carrying out of all agrotechnical measures and creating a reliable foundation for the future harvest. The requirement for this is set forth in the recent decree of the CC CPSU and the USSR Council of Ministers entitled "Additional Measures for Preparing for and Carrying Out Spring Field Work During 1982." During the initial weeks of the new year, Ryazanskaya Oblast experienced an abundance of snow such as had not been seen in this area over a considerable period of time. And although the snowfall and storm complicated transport operations in the rural areas, the farmers were nevertheless happy as they recalled the popular saying: "snow on the fields -- a better harvest." However, the work involves more than just sayings. This is well understood at the Zavety Il'ich Kolkhoz in Kasimovskiy Rayon, where active preparations are being made for the spring field work. The example set by the leading collective is typical for the entire Kasimovskiy Rayon. For the 67,000 hectares of arable land which the rayon's kolkhozes and sovkhozes have at their disposal, the soil cultivation and sowing equipment, 90 percent of the tractors and 80 percent of the motor vehicles have already been repaired and prepared for operations. The agricultural workers in Ryazanskaya Oblast are preparing for the spring of the second year of the five-year plan in an efficient and organized manner. /by V. Zalotukha/ /Excerpts/ /Moscow TRUD in Russian 26 Jan 82 p 1/ 7026



PREPARATIONS FOR SOWING--Bryansk, 9 May--A mutual inspection of the readiness of kolkhozes and sovkhoses in Bryanskaya Oblast for spring operations has commenced. Staffs and special committees are operating throughout the rayons. Fine preparations for the spring work have been made at the Komsomolets Kolkhoz in Novozybkovskiy Rayon. Here the equipment has been repaired completely, the required supply of high quality seed for all of the spring crops has been created and 20 Tons of compost for each hectare of arable land have been made available. /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 10 Mar 82 p 1/ 7026

TOP DRESSING FOR WINTER CROPS--Bryansk, 13 Apr--The early and warm spring is causing the farmers to hasten in carrying out their work. Many farms throughout the oblast have begun applying a top dressing to their winter crop sowings. At the Leninskiy Put' Kolkhoz in Starodubskiy Rayon, mineral fertilizers have been applied to 400 hectares and at the Put' Il'icha Kolkhoz in Surazhskiy Rayon -- to 300 hectares. Mechanized teams are tending the perennial grasses and applying a mineral fertilizer top dressing to them. /by A. Glazkov/ /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 14 Apr 82 p 1/ 7026

WINGED ASSISTANTS--The crews of agricultural aviation have commenced their spring work at the rice sovkhoses in Primorskiy Kray. They are being assisted in this regard not only by the fine summer weather but also by the timely preparation of the field airports and other ground services. Phosphorus and potassium fertilizers will be applied to the checkplots from the air. Prior to the commencement of the sowing campaign, the aviators plan to apply mineral fertilizer to 45,000 hectares of fields -- the entire area set aside for sowing. /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 13 Mar 82 p 1/ 7026

FAR EAST SOWING OPERATIONS COMMENCE--Vladivostok--The farmers in Primorskiy Kray were the first in the Far East to commence their sowing operations. Early grain crops have been sown on hundreds of hectares in the Razdol'noye Valley. This consists for the most part of the Ussuriysk 6 barley variety, developed by Primorskiy Kray plant breeders. /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 2 Apr 82 p 1/ 7026

EARLY GRAIN SOWINGS--The sowing of early grain crops has commenced in Primorskiy Kray. The machine operators of the Sinilovskiy Sovkhoz were the first to move out onto the fields. /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 10 Apr 82 p 1/ 7026

RICE SOWING OPERATIONS--Vladivostok, 10 May--The farmers in Primorskiy Kray are sowing their rice at a rapid tempo. The area for this valuable grain crop now exceeds 45,000 hectares. Distinct from previous years, the plowing, disking and soil preparation work today is being carried out in a well organized manner. According to estimates by specialists, the application of the required amounts of fertilizer will serve to guarantee that a worthy harvest of the white grain will be obtained. /by N. Artapukh/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 11 May 82 p 1/ 7026

SOWING OF EARLY GRAIN CROPS--Farms in the southern part of Khabarovskiy Kray have commenced sowing their early grain crops -- barley, oats, wheat. Despite the complicated weather conditions, the farmers, employing the Ipatovo method, have resolved to complete this sowing work in just 100 working hours. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 15, Apr 82 p 3/ 7026

FIELD WORK PREPARATIONS--Blagoveshchensk, 30 Mar--The oblast's farmers are completing their last preparations prior to moving out onto the fields. Approximately 30 wide-swath units will be employed for sowing at the Partizan Sovkhoz in Tambovskiy Rayon. This year the farm's grain growers expect to obtain no less than 28 quintals of grain from each of 7,500 hectares. The sowing complexes have been formed and agrotechnical training has been provided for the machine operators. The farmers at the sovkhoses Pogranichnyy, Pribrezhnyy, Yerkovetskiy and other farms in the Priamur'ye region are also fully prepared for the spring operations. /Text/  
/Moscow SEL'SKAYA ZHIZN' in Russian 31 Mar 82 p 1/ 7026

BEST SOWING PERIODS--Blagoveshchensk, 8 May--The farmers on a majority of the farms in Tambovskiy Rayon completed sowing their grain crops during the best periods. The machine operators at the Priamur'ye Kolkhoz and the Partizan Sovkhoz were the first to do this. This work is also coming to a close in Blagoveshchenskiy, Ivanovskiy and Seryshevskiy Rayons. The equipment thus being made available is being converted over for use in preparing the soil for soybeans, potatoes and corn. The sowing of annual grasses is being carried out simultaneously. /by Yu. Baklanov/ /Text/  
/Moscow SEL'SKAYA ZHIZN' in Russian 9 May 82 p 1/ 7026

TYPHOON DAMAGE REPAIR WORK--Yuzhno-Sakhalinsk, 15 Feb--Last year's typhoons inflicted considerable damage on the fields in this island region. Many aquicultural systems sustained serious damage. At the present time, the Sakhalin land reclamation specialists are directing their efforts towards restoring all of the damage wrought by the elements. The volume of the work to be carried out is great. Order must be restored to more than 200 bridges, 460 water crossings, 1,400 kilometers of canals, 500 kilometers of roads, many dams and other protective installations. The collectives of land reclamation mechanized columns, Sel'khoztekhnika, Sel'skzhkhimiya and the fertility detachments of sovkhoses have vowed to repair the land reclamation network and other installations on 8,300 hectares prior to the commencement of sowing operations. /by F. Shamazov/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 16 Feb 82 p 1/ 7026

L'VOV-1 LASER UNIT--Khabarovsk--Yesterday the farms in the southern part of Khabarovskiy Kray commenced sowing their early grain crops -- barley, oats and wheat. Here all of the areas are being sown with seed which underwent special processing on the L'vov-1 laser unit. /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 2 Apr 82 p 1/ 7026

YEVREYSKAYA AO SOWING OPERATIONS--Birobidzhan, 6 Apr--The sowing of grain crops is underway in the southern rayons of the Yevreyskaya Autonomous Oblast. The grain growers of a border sovkhos, jointly with the patrons from the Amurstal' Plant, have resolved to plant the seed in the soil during the best periods -- over a period of 110-120 working hours. A single sowing complex was created. All of the sowing units are staffed by two shifts of machine operators. The farmers, together with their patrons, are working under the slogan "Not one day without a record output." This initiative is being followed at all of the farms and supporting collectives. /by Yu. Baklanov/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 7 Apr 82 p 1/ 7026

HIGH QUALITY SOYBEAN SEED--Yesterday the farmers in the Priamur'ye region began sowing their soybeans. More than 450 mechanized teams moved out onto the fields. The seed for high quality varieties of this valuable high protein crop is being placed in the soil -- Amurskaya Zheltaya-41 and Yantarnaya. On waterlogged tracts, a ridging technology is being employed for cultivating the soybeans. /Text/  
/Moscow TRUD in Russian 18 May 82 p 1/ 7026

COMBATING ELEMENTS--Khabarovskiy Kray--This year the ice movement along the lower reaches of the Amur River was accompanied by spring flood waters which were unprecedented in their force. The level of the river was raised one and a half meters higher than at the most dangerous moment of last year's flooding, caused by driving rainfall. All of the islands and floodplain meadows were submerged. The Amur River overran its banks and began flooding coastal settlements, highways and communication lines. But the residents of the port settlement of Mago felt the strongest onslaught by the elements. Here the water caused damage to the maritime fishing port, the Nizhneamurskiy Roadstead, various production buildings and to dozens of dwellings. A correspondent of TRUD and member of an extraordinary committee for combating the elements, deputy chairman of the Nikolayevsk-na-Amur Municipal Executive Committee A. Lyashchevskiy, was informed that the residents of the city and settlements countered the elements with bravery and a high level of organization. Warned in a timely manner by the hydrological service, they created emergency brigades in all of the dangerous sectors. Electrical motors and other equipment were quickly dismantled and moved to safe areas. In this manner, valuable freight and export wood were saved. Children from the settlement of Mago were transported aboard cutters and a self-propelled barge to a recently built settlement at the Nizhneamurskiy Roadstead. The families of flooded homes were accommodated in a floating hotel -- on a landing. At the present time, the Amur River is returning to its banks. The emergency brigades are clearing away the damage caused by the flooding. They are installing the dismantled equipment back in their former places and they are restoring the roads and lines of communication. /by N. Gureyev/ /Text/ /Moscow TRUD in Russian 18 May 82 p 4/ 7026

HARVEST STRATEGY--Orel--The peculiarities of this present spring period have dictated the strategy to be employed by the oblast's farmers for obtaining a good harvest. The hard morning frosts and the bright sun during the day have forced the machine operators into maneuvering their equipment in an efficient manner. Groups consisting of 2-3 units have been created in each large mechanized detachment at the kolkhozes and sovkhozes. /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 6 Apr 82 p 1/ 7026

A PROGRESSIVE METHOD--Orel, 27 Apr--The front of the field work is expanding on farms throughout the oblast. The mechanized teams in Novodereven'kovskiy Rayon turned over the moisture in a rapid manner and sowed grain crops over a considerable area. The machine operators at the Iskra Kolkhoz and the Khomutovskiy Sovkhoz set an example of selfless labor. The farmers in Livenesskiy Rayon are performing in an excellent manner. They are simultaneously applying a top dressing to the sowings of winter crops and grasses, preparing the soil for sowing and sowing early spring crops. On many kolkhozes and sovkhozes in Kromskiy, Glasunovskiy and Zalogoshchenskiy Rayons, the field work is being carried out using the brigade contract method. The field workers are not lowering their high work tempo. /by I. Mironov/ /Text/ /Moscow SOVETSKAYA ROSSIYA 28 Apr 82 p 1/ 7026

TOP DRESSING APPLICATIONS COMMENCE--Domodedovo--The farms in Moscow Oblast have commenced applying top dressings to their winter crops and perennial grasses on a mass basis. This year the specialized detachments of the Mossel'khozkhimiya Association have converted over to providing all-round services for the kolkhozes and sovkhozes. /Text/ /Moscow SOVETSKAYA ROSSIYA in Russian 6 Apr 82 p 1/ 7026

CORN SOWINGS EXPANDED--Stupino--The farmers in Moscow Oblast are completing their sowing of corn. This year the areas used for this crop will be expanded by 13,000



hectares. The farmers in Stupinskiy Rayon are maintaining a high sowing tempo. Here the seed has been planted in the soil on 2,500 hectares. Throughout the oblasts as a whole, the farm workers are planting this crop on 118,000 hectares. /Text/ /Moscow IZVESTIYA in Russian 10 May 82 p 1/ 7026

EFFICIENT USE OF EQUIPMENT--Kaluga--This year the spring period in the Priokskiy region of the nonchernozem zone has turned out to be very capricious indeed. Clear sunny days have yielded to frequent rainfall and this has impeded field work. Countering the inclement weather with a high level of organization, the Kaluga farmers, following the example set by the workers in Ipatovskiy Rayon, created 439 mechanized complexes consisting of 1,560 teams. This is making it possible to utilize the equipment more efficiently. The machine operators in Kozel'skiy Rayon are performing in an excellent manner. The collective at the Krasnyy Kombinat Sovkhoz required only 45 working hours for planting early grain crops on the entire area set aside for this purpose. The Rossiya Kolkhoz, which is headed by Hero of Socialist Labor G.I. Sonin, and a number of other leading farms in Kozel'skiy Rayon, completed their sowing of grain crops during the best agrotechnical periods and in a high quality manner. /by N. Aleksandrov/ /Text/ /Moscow TRUD in Russian 8 May 82 p 1/ 7026

HIGHER WORK RATES--Kaluga--Despite a late spring, the oblast's farms succeeded in achieving a high level of organization and efficient operation of the entire sowing production line. The work rates are higher than those of last year. The farmers on kolkhozes and sovkhoses in Zhizdrinskiy Rayon were the first to complete sowing their early grain crops -- only one week was required. /Text/ /Moscow IZVESTIYA in Russian 10 May 82 p 1/ 7026

SPRING FIELD WORK CONCERNS--Cheboksary, 19 Apr--The snow disappeared rapidly from the fields in the Chuvashskaya ASSR and the rains came. Without losing any time, the farmers in the autonomous republic commenced their spring field work. Top dressings are presently being applied to the winter crops, which occupy 160,000 hectares. The condition of the sowings is fine in all areas. The grain growers are utilizing all methods for applying their fertilizers. Efficient and harmonious work is being carried out on the farms in Alatyrskiy, Vurnarskiy, Batyrevskiy and other rayons. /by L. Alekseyev/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 20 Apr 82 p 1/ 7026

TENDING OF WINTER CROPS--Kirov, 7 May--A full-value mineral top dressing is presently being applied to hundreds of thousands of hectares of winter rye. The farms are placing great hopes upon their rye fields. Last autumn the sowings of rye were increased by one and a half times and the sowing of 600,000 hectares was carried out during the best periods. Thus the seedlings emerged from the winter in fine condition. /by V. Shul'gin/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 8 May 82 p 1/ 7026

COMPOST FOR FIELDS--Pskov, 29 Dec--Motor vehicles and tractors pulling trailers loaded with organic fertilizers are presently moving along over snow covered roads. The collective at the Pobeda Sovkhoz in Pskovskiy Rayon is carrying out this important work in a most organized manner. Approximately 20,000 tons of compost have been moved out onto the fields here in behalf of this year's harvest -- at the rate of 10 tons per hectare. Fifty mechanized detachments and teams, which deliver up to 5,000 tons of farmyard manure daily, have been created in Novosokol'nicheskoy

Rayon. More than 300 mechanized detachments are in operation at the present time on the oblast's fertility routes. They are procuring no less than 12 tons of farmyard manure and compost for each hectare of spring crop field. /by Z. Vasil'yev/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 30 Dec 81 p 1/ 7026

PSKOVSKAYA OBLAST SPRING FIELD WORK--Pskov, 23 Apr--Spring arrived on the fields in Pskovskaya Oblast almost 3 weeks earlier than usual. Having completed in an organized manner such operations as applying a top dressing, harrowing the winter crops and bringing up the organic materials, the farmers commenced carrying out their principal spring field work without delay. The mechanized detachments and teams in Pytalovskiy, Pustoshkinskiy, Pechorskiy and Nevel'skiy Rayons are preparing their soil for sowing. The cultivation work is being carried out with simultaneous applications of organic and mineral fertilizers. Tens of thousands of hectares of soil have already been prepared for the sowing of flax, early grain crops, potatoes and forage crops. /by Z. Vasil'yev/ /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 24 Apr 82 p 1/ 7026

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## LIVESTOCK FEED PROCUREMENT

### BELORUSSIAN OFFICIALS DISCUSS FEED RESERVES FOR WINTER PERIOD

Minsk SOVETSKAYA BELORUSSIYA in Russian 21 May 82 p 1

/Article: "On the Readiness of the Republic's Kolkhozes and Sovkhozes for the Procurement and Establishment of the Necessary Feed Reserves for the 1982/83 Winter Period"/

/Text/ The Central Committee of the Communist Party of Belorussia heard reports by Comrade F. P. Sen'ko, BSSR minister of agriculture; Comrade N. S. Yakushev, BSSR minister of fruit and vegetable industry; Comrade A. Ya. Kalitko, BSSR minister of procurement; Comrade S. T. Moiseyenko, BSSR minister of forestry; and Comrade B. M. Pozharskiy, chairman of the BSSR State Committee for Supply of Production Equipment for Agriculture, on the readiness of kolkhozes, sovkhozes and other organizations in the republic for the procurement and establishment of the necessary feed reserves for the 1982/83 winter period. The decree adopted on this matter notes that the foundation for the establishment of the necessary feed reserve on every farm has been established this year. Basically, spring crops are sown at an optimum time and the quality of work is good. The areas under corn and pulse and other fodder crops have been expanded. The specific composition of perennial and annual grass has been improved. More attention is paid to natural fodder land. Detachments and links for feed procurement have been established and personnel is being trained.

At the same time, in a number of rayons, kolkhozes and sovkhozes proper attention is not paid to feed production problems. To date the supplementary feeding of meadows and pastures has not been completed. Only 58 percent of this work has been done in Vitebskaya Oblast and 62 percent, in Mogilevskaya Oblast. The care of fodder crops on arable land has not been properly organized everywhere. Many kolkhozes and sovkhozes and enterprises of the Belorussian SSR State Committee for Supply of Production Equipment for Agriculture slowly complete the work on the preparation of feed harvesting equipment and drying facilities. As of 16 May 16 percent of the shredder mowers and pickup presses, 13 percent of the other mowers, 22 percent of the tractor rakes, 13 percent of the vitamin meal units and 11 percent of the tractor trailers were out of order. The preparation of equipment is especially unsatisfactory in Vitebskaya, Gomel'skaya and Minskaya Oblasts. The necessary reserve of spare parts, subassemblies and units has not been established at the bases of the State Committee for Supply of Production Equipment for Agriculture. Some farms are not fully provided with fuels, lubricants, film and twine. Work on the construction and repair of storage facilities for hay, haylage, silage and other types of feed is carried out slowly. The preparation of warehouse premises for the acceptance and storage of vitamin meal has not been completed at the enterprises of the Belorussian SSR Ministry of Procurement.

The reports by Comrades F. P. Sen'ko, N. S. Yakushev, B. M. Pozharskiy, A. Ya. Kalitko and S. T. Moiseyenko on the measures taken to most rapidly conclude the preparation of kolkhozes and sovkhozes for the procurement and establishment of the necessary feed reserves for the winter period were taken into consideration.

BSSR ministries of agriculture, of fruit and vegetable industry, of procurement and of rural construction, the BSSR State Committee for Supply of Production Equipment for Agriculture, the Belorussian Interkolkhoz Construction Organization, oblast, city and rayon committees of the Communist Party of Belorussia, oblast and rayon executive committees, farm managers and specialists and party organizations were instructed to ensure by the beginning of grass harvesting and feed procurement the full readiness of all equipment and an unconditional fulfillment of the outlined program for the commissioning of new and the repair of existing storage facilities and other feed production projects.

It is necessary to efficiently deal with material and technical resources, to assign equipment to permanent specialized detachments and links, when necessary to form interfarm detachments, to create conditions for a highly productive operation of feed harvesting units during the entire day, to use them by the flow-group method and to establish the strictest control over the observance of the technology of feed procurement and the fulfillment of shift and day assignments.

It was recommended that oblast, city and rayon committees of the Communist Party of Belorussia, oblast, city and rayon executive committees and kolkhoz and sovkhoz managers enlist all the able-bodied population in rural areas in feed procurement from nonagricultural land, water-logged meadows, meadows overgrown with bushes, roadside belts, forest glades and sections where it is impossible to use equipment, for these purposes also form detachments of mowers from workers and employees of industrial enterprises, organizations and institutions in cities and rayon centers and create conditions for their highly productive work.

BSSR ministries of agriculture and of fruit and vegetable industry, oblast and rayon executive committees and farm managers and specialists must ensure the observance of all the technological conditions of the feed procurement conveyor, widely utilize advanced technologies of feed procurement, that is, chemical preservation, active ventilation, pressing and so forth, and greatly increase the production of vitamin meal.

They must avoid delaying the beginning of grass harvesting and envisage the maximally full utilization of second and third hay cuts.

Oblast, city and rayon committees of the Communist Party of Belorussia, executive committees of oblast, rayon, rural and settlement soviets of people's deputies and party, trade-union and Komsomol organizations of kolkhozes and sovkhozes must expand the socialist competition for the attainment of the highest results in feed production, widely popularize advanced techniques and methods of work, review the daily results of fulfillment of assignments by detachments, links, crews and individual machine operators and on every farm provide moral and material incentives for workers for the utilization of all feed production potentials and the creation of the necessary reserves of high quality fodder.

Committees, groups and posts of people's control must strictly observe the course of work on feed procurement and see to it that the recording and preservation of feed are ensured.

The editorial boards of republic, oblast, unified and rayon newspapers and the BSSR State Committee for Television and Radio Broadcasting were instructed to systematically illuminate the course of socialist competition of labor collectives for a full provision of the public stock and livestock privately owned by citizens with high-quality feed for the 1982/83 stabling period, to disclose the experience of advanced workers and to strictly react to shortcomings and oversights.

The BSSR Ministry of Agriculture was ordered to prepare and publish in the press recommendations for the organizational and technological requirements for feed procurement on the republic's kolkhozes and sovkhoses in 1982.

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## LIVESTOCK FEED PROCUREMENT

### SECONDARY DAIRY RAW MATERIALS AS PROTEIN SOURCE FOR FEED

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 5, May 82 pp 37-40

/Article by B. Zenenko, candidate of economic sciences and senior scientific worker at the All-Union Scientific Research Institute of Agricultural Economics: "Secondary Dairy Raw Materials -- An Important Reserve for Feed Protein"/

/Text/ The growth in livestock output planned for the Eleventh Five-Year Plan must be achieved as a result of raising the productivity of the livestock and poultry, based upon ensuring that the animals are fully supplied with highly nutritious feed that is well balanced in terms of digestible protein. In solving the food problem, a considerable role will be played by the use of skim milk, buttermilk and whey, that is, the secondary materials obtained from the production of butter, cheese, pot cheese and sour cream at enterprises of the dairy industry. The ever-increasing importance being attached to these types of secondary raw materials is conditioned mainly by their considerable volumes (they constitute 75 percent of the volume of the principal raw material -- whole milk) and by their comparatively great protein content. Skim milk contains 3.2 percent protein, buttermilk -- 3.3 percent and whey -- 0.8 percent.

The secondary raw materials are being used today for the production of many food products (from dry skim milk to various dairy drinks and pot cheese, a number of feed products (from various types of whole milk substitutes to bacterial yeasts and enrichment agents used for the ensiling of feed), medical products (dairy sugar) and technical products (technical casein). It is difficult to exaggerate the importance of these secondary raw materials to livestock production. One ton of skim milk contains 197 kilograms of feed units, 1 ton of buttermilk -- 170 and 1 ton of whey -- 80-110 kilograms. In 1980, according to our estimates, agriculture obtained with milk that was returned and sold to the suppliers in the form of secondary raw materials and feed products obtained from such raw materials (whole milk substitutes, dry skim milk, dry and condensed whey and so forth), 4.93 million tons of feed units or more than 760,000 tons of protein, that is, more than 42 percent of all of the protein obtained by industry with the milk procured.

Since more than one half of the entire amount of protein contained in the milk procured by the state (in 1980 -- 65 percent), during the course of processing the latter, was converted into secondary raw materials, its proper utilization is considered to be a priority task of both industry and agriculture.

According to our computations (carried out using materials published in the journal MOLOCHNAYA PROMYSHLENNOST' /Dairy Industry/, No 4, 1971, No 4 for 1976 and Nos 5 and



6 for 1980), the expenditure of dairy protein (in percentages of the amount received at dairy industry enterprises with the milk procured) in 1980 and compared to 1970, for the production of food products, increased by a factor of 1.01 (from 53.9 to 54.8 percent), for the production of technical and medical products -- by a factor of 2.8 (from 0.8 to 2.2 percent) and for feed for agricultural animals on the whole it decreased somewhat (from 44 to 42.5 percent). Moreover the expenditure of protein for livestock feed, protein obtained by the farms with the secondary raw materials, returned and sold to the suppliers of the milk, decreased by 19.7 percent (from 43.2 to 36 percent), and that obtained with industrial feed output, developed from secondary raw materials (dry skim milk, whole milk substitute, dry and condensed whey and so forth), increased by a factor of more than 8 (from 0.8 to 6.5 percent). The losses in milk protein decreased by a factor of 2.6 (from 1.3 to 0.5 percent).

More rapid rates of growth in the expenditure of milk protein for industrial output, for the feeding of agricultural animals takes place mainly as a result of a constant increase in the use of the secondary raw materials for livestock feed in processed form. The data in the Table, computed by us using materials published in the above-mentioned issues of the journal MOLOCHNAYA PROMYSHLENNOST', allows one to make a judgement concerning the changes which have taken place over the past 10 years in the structure of use of the secondary raw materials.

Expenditure of Secondary Raw Materials Obtained From Milk Processing  
at Enterprises of the Dairy Industry (in % of overall amount)

	1970		1975		1980	
	Skim milk and buttermilk	Whey	Skim milk and buttermilk	Whey	Skim milk and buttermilk	Whey
Use for production of products:						
food products	21.5	3.6	24.6	6.8	33.8	14.5
feed	0.2	0.2	3.1	0.6	8.0	8.7
technical and medical products	2.2	6.5	2.6	6.3	3.0	7.6
Returned and sold to agriculture in natural form	75.5	66.3	69.1	70.6	54.7	62.9
Losses	0.6	23.4	0.6	15.7	0.5	6.3

It is apparent from the above table that the processing of secondary raw materials into products for feeding to agricultural animals increased at a very rapid tempo. The rates of increase for processing them into food products were also rather high. However, an increase of almost twofold in the expenditure of secondary raw material resources for the production of technical casein should be mentioned as an adverse phenomenon.

Despite a reduction in recent years, the proportion of the skim milk, buttermilk and whey being returned and sold in unprocessed form is still rather high and this adversely affects the rational use of this valuable protein raw material. The fact of the matter is that the mass calving of cows occurs in the spring and the principal amount of the raw materials is returned by industry to the farms during the summer months, by which time the requirements of the young stock for these materials have decreased. The fact that the calvings and the times at which the

secondary raw materials are returned to the farms do not coincide and also the inability to store these materials for an extended period of time lead to the irrational use of this protein raw material -- the feeding to adult animals in considerable quantities.

The wasteful use of these secondary raw materials is also caused by other factors. One such factor is the disparity between the low prevailing prices for such raw materials released to the farms and their great importance and high nutritional value. Owing to their low wholesale prices, these secondary dairy raw materials become very cheap feed for the farms: 1 quintal of feed units contained in them costs considerably less than that in any plant feed. As a result, the farms do not maintain a thrifty attitude towards the use of these materials.

The artificial lowering of the wholesale prices for these secondary raw materials (skim milk and buttermilk are obtained by the farms at the rate of 10 rubles and whey -- 3 rubles per ton) is clearly borne out by the following example. If milk and the secondary raw materials are evaluated on the basis of not only their content of fat but also other nutrients (protein, carbohydrates, vitamins, microelements, mineral substances), then it turns out that based upon computations for whole milk and in accordance with the procurement prices the state pays the kolkhozes and sovkhoses 2.21 rubles for 1 kilogram of dry substance in the milk and sells them 1 kilogram of dry substance in skim milk for 12 kopecks and in whey -- for 6 kopecks. A similar picture also emerges if an evaluation is carried out based upon energy indicators: 1 kilojoule in whole milk costs 1.04 rubles, in skim milk -- 08 kopecks and in whey -- 04 kopecks.

The low prices for the secondary raw materials came into being back when the dairy industry was just beginning to develop and lacked the capabilities for processing them; its principal production product was butter at that time. Thus the procurement prices for milk and the wholesale prices for the secondary raw materials were established based upon their fat content only. Up until now, when evaluating the quality of milk in accordance with the existing GOST, the content of its most valuable component -- protein -- has not been determined, although instruments have been developed for determining it. At the present time, the USSR Ministry of the Meat and Dairy Industry, jointly with the USSR Ministry of Agriculture, are developing a new GOST /state standard/ for procured milk in which a determination of protein content will be viewed as the principal indicator of milk quality.

One factor which is causing agriculture to be supplied with a large quantity of secondary dairy raw materials in unprocessed form is the insufficient capabilities of the dairy industry for processing these materials and the absence of scientifically sound norms for returning the skim milk for feeding to young stock.

In the interest of ensuring the most efficient utilization of the secondary dairy raw materials in livestock production, the materials should be supplied to the kolkhozes and sovkhoses not in a natural or unsuitable for storage form but rather in a processed form, in such products as whole milk substitute, dry skim milk or dry and condensed whey, that is, products which are well preserved and do not require special conditions for storage. Such products are distinguished by their general purpose nature: they can be employed as independent products once they have been brought to the required consistency and also as components in mixed feed.



The creation of capabilities for the production of whole milk substitutes and other feeds based upon the use of secondary raw materials must be carried out not only by means of state capital investments but also using funds formed as a result of cooperation between the milk processing enterprises on the one hand and the kolkhozes and sovkhozes on the other. Recently, this form of cooperation has been employed more extensively.

The experience of collaboration between the Khorol Dairy Canning Combine and farms in its raw material zone (see MOLOCHNAYA PROMYSHLENNOST', 1981, No 5) has been rather instructive. On the basis of integration between them, a department was created at the combine for the production of dry skim milk and whole milk substitute. Today all of the farms within the combine's raw material zone are using secondary raw materials for feeding to their young stock, but only in processed form. The deliveries of these materials in keeping with the norms for the return of skim milk has enabled the farms to create supplies of dairy feed during the summer period and thus they are able to regulate partially the seasonal nature of milk sales to the state and to raise the marketability of the latter. As a result, the combine procured 3,600 additional tons of milk and used it to produce 1.5 million rubles worth of products and the farms realized additional profits amounting to 650,000 rubles. Moreover, 40 transport units and more than 50 service personnel were released from having to transport the liquid skim milk and thus were free to carry out other agricultural work. During 1980 alone, the savings in transport expenses amounted to more than 200,000 rubles worth of fuel and lubricating materials.

Whole milk substitutes and dry skim milk are the principal feed products being obtained from skim milk and buttermilk. They are obtained using almost the same equipment. The production of these products is increasing at a rather rapid rate. During the years of the Tenth Five-Year Plan alone, when 32 such plants were built, the production of dry skim milk and whole milk substitute increased by 21 and 73 percent respectively. During these years, efficiency in the production and use of whole milk substitute increased noticeably: the kolkhozes and sovkhozes received 1.8 billion additional rubles for milk used earlier for feeding to calves and now being sold to the state; as a result of processing an additional quantity of milk, the enterprises of the dairy industry sold products valued at 1.6 million rubles (see MOLOCHNAYA PROMYSHLENNOST', 1980, No 8, p 3).

Owing to the fact that during the next few years a conversion will be carried out over to returning milk to the suppliers rather than liquid skim milk or whole milk substitute, the requirements for the latter will decrease sharply. According to our computations, roughly 12 million tons of whole milk are presently being expended annually for feeding to young agricultural animals. Since 1 ton of substitute is equivalent to 8 tons of whole milk, 1.5 million tons of the former are being expended annually. The production of such a quantity of whole milk substitute requires an increase in the capability for producing it of 3.4 times and this requires approximately 740 million rubles worth of capital investments.

Despite the by no means complete satisfaction of the requirements of livestock production for dry skim milk and whole milk substitute and also the considerable requirement for capital investments for increasing the production of these types of products, the existing capabilities for producing them are still not being used sufficiently. Studies by B.I. Sterligov and I.A. Dubrovin have shown that one half of all of the enterprises engaged in the production of dry skim milk and whole milk

substitute are not operating at full capability and are not even achieving the average indicator throughout the country for shift output, which equals 91 percent of the normative level (see MOLOCHNAYA PROMYSHLENNOST', 1981, No 3, p 16). The authors believe that if the use of the mentioned indicators at such enterprises is raised to the average for the country that it would become possible, without additional expenditures, to increase the production of the particular products at enterprises of the dairy industry by 30,000 tons annually.

The incomplete use of the capabilities for producing whole milk substitute is partially explained by a lack of interest on the part of the enterprises in increasing its production owing to the low profitability compared to the level of production profitability for other products made from skim milk. According to the computations of the above-mentioned authors, the profit in agriculture from the use of 1 ton of whole milk substitute amounts to an average of 1,300 rubles and the savings in capital investments with regard to the construction of livestock production facilities -- 3,600 rubles. Taking into account the great economic effect realized in this branch from the use of whole milk substitute, it is considered advisable to raise somewhat the wholesale price for it in order to raise the profitability level for the production of the given product.

In view of the fact that skim milk and buttermilk are being utilized in increasing volumes for the production of food products and that this trend in the use of this valuable protein raw material is expected to continue in the future, a principal reserve for increasing the production of feed products for livestock production from secondary dairy raw materials will be that of increasing the use of whey for this purpose.

The assortment of feed products produced from whey number more than ten types, with new ones being added constantly. However, up until recently these products were being produced in quantities which by no means satisfied the requirements of the agricultural livestock.

A number of formulas have been developed and are being introduced successfully for the production of whole milk substitute, with up to 50 percent of the skim milk being replaced by whey (ZTsM-2, Bio-ZTsM). The economic effect for the national economy from the production and use of the indicated types of whole milk substitute is higher than that from the production and use of the conventional substitute (ZTsM; whole milk substitute) by 29.6 and 53.6 percent respectively (see M.B. Danchenkov, A.G. Tarada, Yu.A. Basov. Ekonomicheskaya effektivnost' promyshlennoy pererabotki molochnoy syvorotki; Economic Effectiveness of Industrial Processing of Whey. Moscow, 1979). An expansion in their production will make it possible to reduce considerably the expenditures of skim milk for feed purposes. Thus, in order to produce whole milk substitute in the amount of 1.5 million tons (in accordance with the computation cited above), with equal distribution of it by types (ZTsM, ZTsM-2, Bio-ZTsM), only 9.7 million tons of skim milk is required and not 14 million tons and whey -- 5.4 million tons. This amount of raw materials can be directed towards the production of whole milk substitute without reducing the planned volumes for processing it for food products.

Recently, in addition to such well proved livestock production products as condensed and dry whey, other types of products made from whey have appeared the production of which is profitable. Moreover, their use for feed purposes promotes

an increase in the productivity of the cows and greater live bulk in the young large-horned cattle stock and hogs undergoing fattening. Such products include dry and liquid whey concentrates (the economic effect from the use of 1 ton of these concentrates is 31 and 4 rubles respectively), bacterial leaven for the ensiling of feed VNIIMS /All-Union Scientific Research Institute of the Butter and Cheese-Making Industry/ INBI /Institute of Biochemistry imeni A.N. Bakh of the USSR Academy of Sciences/ (raises the content of feed units in 1 ton of silage by 30-80 kilograms; the economic effect from the use of 1 ton of leaven -- 5.7 rubles) and a number of others.

The production of enriched whey is increasing at a rapid rate; it is in popular demand for livestock production purposes and its production does not require considerable material-monetary expenditures or specialized equipment. During 1980 alone, its production volume increased by more than a factor of four and reached 759,000 tons.

During the past few years, new physical-chemical methods and technologies for processing the principal and secondary raw materials have entered into widespread use in the dairy industries of a number of foreign countries. A number of methods have aroused special interest: the rational use of waste products from the principal production, ultra-filtration (concentration of protein) and inverse osmosis (concentration of all dry substances), based upon the peculiarities of the permeability of certain polymer films. These new methods are making it possible, in the absence of considerable energy expenditures (evaporation, drying) to obtain products having a protein concentration up to 70 percent. The introduction of physical-chemical methods will make it possible to solve more problems concerned with the production of protein feeds for livestock production and their storage on farms during the between-season period. The extensive use in our country of these highly effective and multi-purpose methods (for the purpose of obtaining protein concentrates, food products, childrens' preparations, sewage purification of protein impurities and so forth) is being delayed by the slow development by our domestic chemical industry of the production of the appropriate polymer films.

In the near future it will be necessary to raise sharply the level of use of secondary dairy raw materials for the production of food and feed products and to reduce to a minimum the return to agriculture of these raw materials in unprocessed form and also the processing of it for technical casein.

With regard to the processing of whey, the plans call for the production of feed products from it to be carried out at a rapid tempo for livestock production purposes and for the production of medical products (dairy sugar) -- at a less rapid tempo. The rates of growth for the production of food and feed products from skim milk and buttermilk must be roughly equal and the production rates for technical casein -- to be gradually reduced to complete cessation of its production. The principal purpose of technical casein -- the production of adhesive and haberdashery goods (buttons, combs and so forth). With the modern development of the chemical industry, the principal bulk of the adhesives and buttons is being produced from synthetic resins and thus there is no need for using highly valuable protein raw materials for producing them. From that portion of the skim milk that is not being used for the production of technical casein, an additional 110,000 tons of substitute whole milk can be produced according to our computations and this will enable the farms to increase their above-plan sales of milk to the state by almost 1 million tons.

The immediate implementation of measures aimed at uncovering and utilizing the reserves that are available for ensuring the rational and thrifty use of the secondary dairy raw materials, both at individual farms and inter-farm enterprises and throughout the country as a whole, will promote a rapid solution for the food program.

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## LIVESTOCK

### MORE ATTENTION TO UKRAINIAN PRIVATE PLOTS URGED

Moscow PRAVDA in Russian 20 May 82 p 2

/Article by V. Vasilets, PRAVDA correspondent: "Although the Farm Is Private"/

/Text/ A total of 586,000 head of large-horned cattle, including 375,000 cows, are kept on the private farms of rural workers in Ivano-Frankovskaya and Volynskaya Oblasts. In the last few years the productivity of the peasant herd declined. Now the picture has changed.

The workers of the Kolkhoz imeni 21 S"yezda KPSS in Tysmenitskiy Rayon cultivate an unusual field. By the way, this is not a field--this is a pasture, which the residents of the village of Staryy Lysets, who have cows in their yards, have received from the kolkhoz for use.

"In Staryy Lysets there are 85 cows," says N. Stepovoy, chairman of the board. "In order to provide farmsteads with fodder, we allocated from eight to fifteen hundredths of a hectare of the pasture to every owner of a cow. We reclaimed and cultivated it."

The kolkhoz specializes in milk production. Last year the milk yield per 100 hectares of land was 1,060 quintals. More than 3,000 kg per cow were obtained. The figures speak for themselves. And here a question is anticipated: With such a productivity of livestock how can the public fodder wedge be reduced?

"On our kolkhoz the dairy herd now is not divided into collective and private," continues Nikolay Lavrent'yevich. "It is, as it were, a single common herd."

He opens a writing pad. We will return to the figures, but now let us discuss how work was organized in a new way in all Ivano-Frankovskaya Oblast. I. Skiba, first secretary of the oblast party committee, says:

"In the Carpathian area every 10 yards account for almost 10 head of large-horned cattle. Previously, rural soviets engaged in the procurement of surplus output. They did not have receiving centers or transport facilities. Now milk purchases from the farms and from the population are planned for one supplier--the kolkhoz."

Up till now kolkhozes received from farmsteads a few hundreds of quintals of output and, of course, there was no question of profitability of the expenditures connected with its procurement from the population. Now during the first quarter alone state resources were replenished with more than 5,000 tons of milk. First-grade milk was sold. A profit was derived. First, there was an additional payment for quality and, second, there were no depreciation allowances. After all kolkhozes did not build new sections for the additional production of milk, did not equip them with mechanisms and did not use water or electric power.

Is such cooperation profitable for the peasant? You will find the answer on the same Kolkhoz imeni 21 S"yezda KPSS. Here, in addition to Staryy Lysets, there are three other settlements. A total of 495 cows are kept on them. The oblast center is quite near. Previously, many people hurried to the market with milk cans. As is well known, a milk jug costs more there. However, if the expenditures on transport and on the purchase of feed elsewhere are calculated and, finally, the time spent on trips to the city and on the search for feed is evaluated, of course, it is simpler to sell the surplus product locally.

And not only simpler. There is an incentive. Let us take the same pasture. When and who had it? Now there is a contract: You sell milk, you use the meadow. The contract is not only with a kolkhoz member. If a teacher or a pensioner keeps a cow, the terms are the same.

In addition to the pasture the kolkhoz allocates mixed feed and provides veterinary services and the insemination of cows in order to improve the pedigree composition of domestic animals.

"Such attention to the subsidiary farm is beneficial to all," says kolkhoz member I. Gumenyak. "We have received a firm guarantee for feed provision and the sale of surplus milk. I concluded a contract for the sale of 1,000 kg and will fulfill it without fail. Now in the village we have as many cows as contracts. People have willingly responded to this concern."

We sit with the kolkhoz chairman in the receiving milk center. On the wall there is a panel, on which the names of deliverers of output, their obligations and daily indicators of contract fulfillment are indicated. Such centers were built in every village. Since the beginning of the year they received more than 300 quintals of milk--six times as much as on this date last year.

Following the example of the Kolkhoz imeni 21 S"yezda KPSS 1,160 receiving centers were opened in the oblast. A total of 112,000 contracts for the sale of 49,000 tons of milk were concluded with the owners of cows. In order to take output in full, on a significant number of kolkhozes pastures and hayfields were allotted for individual use. In Rogatinskiy and Snyatynskiy Rayons many pastures were divided into maps and fenced off.

Kolomyyskiy Rayon went even further in the provision of incentives for the sale of output to the state. I had occasion to visit the Znamya Kommunizma Kolkhoz. The best milk deliverers publicly received three heifers from highly productive cows as a reward for an active participation in the sale of surplus output.



Concern for the development of the individual sector of animal husbandry is repaid generously. However, in the opinion of managers in the oblast, there are still many potentials here. More milk will be received if more feed and fertilizers are given "for it." Receiving centers are short of centrifuges, instruments for the determination of the fat content of milk, scales and refrigerators. It is even difficult to purchase an ordinary milk can and pail, not to mention a separator. The Ministry of Agriculture, the Ministry of Procurement and other departments in the republic have something to think about here.

Finally, the most burning question--the delivery of output to the place of its processing. It is necessary to enact a statute according to which plants transport milk with their own special transport facilities and are responsible for its preservation.

Interesting experience in the development of domestic farms was also accumulated in Volynskaya Oblast. I. Sementsov, first secretary of the Gorokhovskiy Rayon Party Committee, hero of socialist labor, stopped the car on the boundary dividing the kolkhoz field and private gardens.

"Look," he pointed to the private plots. "What corn, ah?"

"Was it not sown previously?"

"It was considered that the field of Volynskaya Oblast was not suitable for it. Now in any garden seven to ten hundredths of a hectare are planted with corn. This is as much fodder as needed to fatten a young bull. Last year the rayon bought 1,516 tons of meat from the population."

The idea of the people of Gorokhovskiy Rayon to fatten livestock on private farmsteads on the basis of contracts did not immediately find supporters.

"When we decided to introduce cooperation," says V. Makhovikov, first secretary of the Lutskiy Rayon Party Committee, "primarily managers were obstinate: To distribute feed to yards when there is not enough of it for the public herd? We had to convince the skeptics. After all, it makes no difference where a young bull is fattened--on the farm or homestead. Conversely, with such an approach to this matter, for example, 1 kg of mixed feed will accumulate domestic additives and produce a higher yield. In addition, the kolkhoz does not have to build additional premises. In brief, contracts were concluded. The results exceeded the forecasts: A total of 22 percent of the meat in the total volume of procurement was from the peasant yard."

Now in Volynskaya Oblast there are no kolkhozes and sovkhoses that would not cooperate with the population. About 90,000 contracts for the fattening of young large-horned cattle were concluded. For example, peasants in Ivanichevskiy Rayon engage in this matter on the following terms. The kolkhoz gives them 6 quintals of coarse feed free of charge and concentrates for money. It also obligates itself, as a reward, to pay 50 rubles for a delivered young bull weighing 350 kg and 100 rubles if its weight reaches 400 kg and more. This, in addition to the basic payment. In turn the master of the house guarantees the kolkhoz that it will fatten a young bull up to 350 or 400 kg and sell it at the price of 1 ruble 69 kopecks per kg of live weight.

The arithmetic is simple. However, it represents 17,300 tons of meat additionally sold throughout Volynskaya Oblast last year. Yet the potentials for the replenishment of meat stocks in the oblast have not been exhausted. There could be more fodder and many yards could begin raising even two young bulls.

It is important to attentively glance at the private plot. Now it is spring, the calving of cows is being completed and new contracts for the procurement of livestock products are being concluded. When making rounds to yards, why not be interested in what the owner of a young bull sows in his garden and when. People do not always have choice seeds of corn, fodder sugar beets, potatoes, carrots and grass. Large areas are assigned to such plots--more than 68,000 hectares in Volynskaya Oblast and 93,300 hectares in Ivano-Frankovskaya Oblast.

The Poleshchuks and Gutsuls, along with raising young bulls, would willingly fatten chicks, geese and ducks if the republic's administrations of the poultry raising industry began concluding contracts with the population.

Finally, we cannot but agree with the opinion of suppliers and procurement officials that today the rural yard cannot do without a feed cutter, separator, mower and other small-scale equipment. It is time for our industry to equip the peasant farmstead with the necessary machines and for the appropriate departments and local soviet and agricultural bodies to help more rapidly make the farmstead a reliable source of replenishment of state resources with livestock products.

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SOVIET-HUNGARIAN AGROINDUSTRIAL COOPERATION

Moscow FOREIGN TRADE in English No 5, May 82 pp 22-25

[Article by Dmitri Markov: "Soviet-Hungarian Cooperation in the Agro-Industrial Sphere"]

[Text] One of the basic conditions for the CMEA member countries' further economic advancement and raising living standard of their peoples on this basis is the development and deepening of their ties of integration. Consistent fulfilment of the tasks set out in the Comprehensive Programme for socialist economic integration over the past ten years has enabled these countries to considerably expand their mutual cooperation and enhance its role in jointly solving pertinent problems facing their economies.

The concentration of efforts with a view to intensifying the economic growth of the CMEA countries is a characteristic feature of implementing the Comprehensive Programme at the present stage. Socialist economic integration is intended above all to stably cover these countries' needs for fuel and energy, achieve a high level in mechanical engineering, and satisfy the growing demand for industrial consumer goods and agricultural products. As it was stressed in the Statement on the Results of the Meetings of L.I. Brezhnev, General Secretary of the CPSU Central Committee, with the Leaders of the Communist and Workers' Parties of the fraternal countries in 1981, "in the current five-year period particularly large proportions... will be assumed by the socialist countries' interaction in those economic sectors which serve as a basis for scientific and technical progress and for the growth of the well-being of the population."<sup>1</sup>

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<sup>1</sup> *Pravda*, August 23, 1981.

The long-term specific programmes of cooperation (LSPC) adopted at the 32nd and 33rd CMEA Sessions further expand the socialist countries' integration and help them solve key problems in a balanced manner. These cooperation programmes define the CMEA members' long-term strategy in relevant spheres of material production and assist in specifying and developing the Comprehensive Programme.

The growth of the ties of integration is also increasingly characteristic of the trade and economic cooperation between the Soviet Union and the Hungarian People's Republic, including their joint efforts in the agro-industrial sectors which hold a leading place in the Soviet-Hungarian trade pattern.

Here the matter turns on mutual shipments of not only agricultural products and foodstuff, but also mineral fertilizers and herbicides, equipment for the agrarian sector and the farm produce-processing industries, consumer goods made chiefly of agricultural raw materials, and so on. In other words, the question concerns cooperation within the framework of the entire complex of sectors responsible for the supply of food to the population.

The proportion of agro-industrial products in Hungarian exports to the USSR in present time is about 35 per cent, while in Soviet exports to Hungary it is approximately 10 per cent.

In some agro-industrial sectors economic cooperation between the two countries plays a fundamental role. The Soviet Union, for instance, covers over 60 per cent of Hungary's needs for mineral fertilizers and raw materials for their manufacture. At the end of the past five-year period (1976-1980) Soviet machines accounted for some 40 per cent of Hungary's tractor fleet and about 50 per cent of her combine harvester fleet. Soviet shipments cover more than half the country's requirements for cotton and other products of agriculture and the food industry. Soviet-produced varieties of wheat, sunflower and other crops, as well as pedigree animals have played an important part in the development of agrarian production in Hungary.

Among other countries exporting agricultural and food products to the USSR Hungary holds an important place. This country in the latter half of the 1970s covered over 25 per cent of the USSR's import needs for fresh fruit and berries, more than 50 per cent of these needs for canned fruit and

vegetables, nearly 70 per cent—for fresh apples. Over the last few years Hungary has been more and more enhancing her role as one of the suppliers to the USSR of grain, meat and meat products, poultry, eggs and other farm products. Mention should also be made of Hungary's growing exports to the Soviet Union of plant-protecting substances, farm machines (for instance, seed treating machines), equipment for the canning and dairy industries, poultry-raising farms, advanced plant-growing and animal-breeding technologies, maize hybrid seed, etc.

Proceeding from the principal tasks set in the Comprehensive Programme of socialist economic integration, the Soviet Union and Hungary are consistently deepening their specialization and cooperation in the agro-industrial sphere along with the dynamic expansion of their trade contacts. Over the past ten years a whole number of important agreements have been signed between them, which have laid a sound basis for their integration and cooperation in this sphere. In 1975 an agreement was signed on shipments from Hungary to the USSR of fresh and processed fruit, vegetables and wine. The agreement is effective up to 1990. In 1976 one more agreement was signed on the export from Hungary to the USSR of grain, live-stock, meat and poultry in exchange for Soviet shipments of oil, oil products, timber and several other raw materials. This agreement was signed for a period of five years and then prolonged for the current five-year-plan period. Under these two agreements Hungary's food product exports to the USSR looms large in the Soviet food import structure, thus enabling the USSR to constantly satisfy part of its requirements for agricultural raw materials and foodstuffs.

Good progress is being made in Soviet-Hungarian cooperation in sectors of the so-called industrial base of the food-producing complex: the manufacture of farm and food-making machines, production of mineral fertilizers, pesticides, scientific and technical research, elaboration and introduction of modern technologies, etc. Of major importance here is the agreement on cooperation in the field of agrochemistry, which was signed in 1976 for a period of ten years. The agreement assures considerable shipments from the USSR to Hungary of nitrogenous and potassium fertilizers

and a whole series of organic and inorganic chemistry products and from Hungary of modern plant-protecting substances. In view of the two countries' interest in the further expansion of their cooperation, a protocol was signed in 1979 on the expansion of their mutual shipments to the amount of some 200 million rubles each. It should be pointed out that Hungary's cooperation with the Soviet Union in the agro-chemical sector has given external economic support to Hungary's programme for the development of the manufacture of medicaments, plant-protecting means and intermediates adopted in 1978. In accordance with this programme, the output of plant-protecting substances in Hungary is to approximately double between 1975-1990. The agro-chemical agreement has made it possible for Hungary to discontinue the expansion of the output of large-tonnage products which now come from the USSR, and concentrate resources on developing industries most suitable for her. This agreement has guaranteed for the Soviet agriculture stable shipments of pesticides.

In recent years the two countries' collaboration in the production and mutual shipments of seed and planting stock has assumed large proportions.

Their bilateral contacts in this field are also controlled by a special agreement under which the USSR imports from Hungary appreciable quantities of clover, hybrid maize, vegetable and fodder crop seeds, besides fruit and grape seedlings.

The expansion of scientific and technical cooperation and exchanges of experience in advanced complex technologies have been a new step developing ties of integration between the two countries in the agro-industrial sphere. Already now this form of cooperation covers a whole number of agricultural sectors, including poultry raising, pig breeding, and the growing of maize, sugar beet, rice and some other crops.

The expansion of production technology exchange plays an important part in spreading advanced experience. The need to study and apply the positive experience of the fraternal countries was noted at the 26th CPSU Congress, where attention was drawn, among other things, to the high level of agricultural production organization in Hungary.

Over the past decade Hungary has made considerable progress in raising grain output and developing poultry breeding. In the past five-year period, for instance, the annual yield of wheat in the

country has averaged 4.06 tons per hectare, and that of maize—4.86 tons per hectare. For such indicators as grain output and the production and export of poultry per capita of the population Hungary moved to one of the leading places in the world in the latter half of the 1970s. The major role in the production of grain and poultry belongs to industrial-production systems (IPS), which are a specific form of industrializing agriculture on the basis of the consistent application of the achievements of the scientific and technological revolution, and the development of intersectoral cooperation and agro-industrial integration. The cooperation of state farms and cooperative societies concerning industrial systems is based on the transfer of well-proved advanced complex technologies from the leading farm to the other participants in the system.<sup>2</sup> As a result, Hungarian IPSs have become some of the initiators of, and simultaneously, the principal partners of Soviet economic organizations in developing cooperation between the USSR and Hungary in exchanging complex technologies.

During the past five-year period the new form of contacts has already made appreciable progress. In 1976-1979 one of the leading Hungarian industrial systems for the production of maize, the Bay IPS, had on the basis of mutual agreement organized the growing of maize in Moldavia, having risen the yield of this crop on the experimental field over these three years up to 6.7 tons per hectare. New methods for growing sugar beet were introduced in Hungary with the aid of Soviet specialists, and its yield increased up to 34.5 tons per hectare. Similar cooperation has been undertaken between the Babolna IPS and a Soviet state farm near Lvov (Ukraine), where the use of industrial methods has assured high maize yields on big plots of land.

This form of ties has also made progress in poultry raising. In 1978 a contract was signed between the Soviet Foreign Trade Association Traktoroexport and Agraria, the foreign trade enterprise of the Babolna IPS, for the shipment to the

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<sup>2</sup> For more information about the activity of industrial-production systems in Hungary see the article "The Hungarian People's Republic: Industrial Methods in Agriculture", *Ekonomicheskaya Gazeta*, No. 35, 1981.

USSR of two complexes for breeding parental poultry stock with a total output of 800,000 fowl a year, and two farms for fattening 21.2 million chickens annually. The agreement includes the fitting the farms with the necessary equipment, and supply of the complexes with the Tetra breed, a highly productive strain of poultry, and also the provision of services for the application of the new technologies.

It should be noted that Hungary has now expert experience in applying complex technologies and equipment in the field of plant growing and animal husbandry. In recent years the leading enterprises of the Hungarian IPSs have been exporting technologies and experience in various agricultural sectors to several CMEA member-countries: the USSR, Bulgaria, Czechoslovakia, Romania, and also many developing nations.

Along with the areas of cooperation referred to above, agricultural and food-making machinery engineering is a most important field of Soviet-Hungarian joint effort in the agro-industrial sphere. It is these industries that lay the foundations of technical progress, which in large measure determines the prospects and possibilities of agro-industrial production.

In the period under discussion broad specialization in the manufacture of machines and equipment for agricultural production has been undertaken. At the same time, research and development, coordination in creating machine systems and cooperation in making farm machinery parts and units are not sufficiently developed in the two countries' cooperation as yet. The expansion of these trends needs constant coordination of these countries' technical policies and development of mutual production programmes, and identification of the most effective fields of cooperation.

In 1977 Hungary adopted a long-term plan for developing its farm and food-making machinery engineering, according to which priority will be given to seven groups of machines and equipment, including the manufacture of heavy row-crop tractors and systems of implements for them, equipment for animal breeding, machines for fodder crop growing and harvesting, equipment for personal holding, and so on. Special attention is devoted to expanding the production of assemblies and parts for farm machines. With this aim in mind measures are being

taken to set up new and expand existing productive capacities. It is worth noting that this plan takes care of the development of farm machinery engineering in Hungary and couples it with the further deepening of international specialization and cooperation in production, above all with the CMEA member-countries.

Simultaneously important structural changes and production output renewal are seen in the farm machinery manufacturing industry in the USSR who is the principal supplier of equipment for the agricultural sector in Hungary. Efforts between our two countries in this area could be made more beneficial through better cooperation in the shipments of parts and units for Soviet-made farm machines, all of which are of interest to Hungary. The latter has already gained some experience of such cooperation with farm machinery factories in the GDR and several other socialist countries. For its part, the Soviet Union is interested in a speedier re-organization of the output of modern machines for the agricultural sector and the supply of its new lines of production with quality complementary parts and units.

Broader specialization and cooperation, the establishment and development of new trends of collaboration call for purposeful and painstaking effort. Trade and economic ties have assumed particularly great importance today when the CMEA countries' long-term specific programmes of cooperation are in the stage of practical implementation.

The foregoing shows that over the past ten years on the whole a sound basis has been laid for Soviet-Hungarian cooperation in the agro-industrial sphere. The long-term agreements signed between the two countries cover the leading agro-industrial sectors and ensure consistent expansion of mutually advantageous shipments over this long term. These agreements may form and, in fact, already do form the basis on which Soviet-Hungarian cooperation in carrying out the LSPC for food production is developed.

At the same time in a number of industries there are appreciable reserves for expanding and deepening trade and economic ties between the USSR and Hungary.

This applies, in particular, to farm machinery engineering. There are possibilities for broader cooperation in manufacturing refrigerators for farm



produce, in turning out food-making machines, in making intermediates for manufacturing plant-protection agents, etc.

Hungarian economists and economic executives have suggested far-reaching measures that will further develop Soviet-Hungarian cooperation in the agro-industrial sphere. These measures envisage future expansion of Hungarian exports to the USSR and other CMEA countries of seeds, parental livestock and poultry, complex technologies and equipment for the output of farm produce by industrial methods, assistance in training specialists and the rendering of various services. They concern, above all, two major sectors on whose development Hungary is going to concentrate in the future, namely grain production and animal husbandry.

As the experience of the last few years shows, the development of Soviet-Hungarian cooperation in the above-mentioned direction helps raise and improve agricultural production in our country; also helpful in this respect is the application of the most progressive methods mastered by Hungarian agricultural enterprises. Hungary's industrial systems are quite capable of having their technologies adapted to specific production conditions; the existing forms of compensation for equipment and services provided make these enterprises interested in their partners achieving high stable results. Promotion of such a form of cooperation as the export of complex technologies serves as a means for establishing direct contacts between enterprises; expansion of this cooperation would be conducive to the dynamics and balance of trade and economic relations between the USSR and Hungary.

With wider mutual exports of complex technologies, there will be an objective increase in the importance of scientific and technical cooperation in the agro-industrial sphere, it will also further deepen cooperation in the industrial food production sectors. Broader cooperation in these areas would provide a material basis for the long-term exchange of technologies. Here, generally speaking, we have substantial reserves for expanding mutual ties to intensify production and raise its efficiency.

Broad Soviet-Hungarian cooperation in the agro-industrial sphere also creates conditions for the two countries' joint activity on the markets of the developing states, where our combined efforts would enable us to render more effective aid to the newly

free countries in modernizing and raising their agricultural production and solving their food problem on this basis. In recent years Hungary has made certain progress in exporting complex production systems to newly free countries; however, the country's possibilities in this respect are relatively restricted by the narrowness of our industrial base besides several other factors. Expansion of bilateral cooperation would help Hungary resolve these problems and make it possible for our countries to deepen their economic ties with the newly independent nations in such an area of vital importance to them as food production.

The balanced development of trade and economic ties between the USSR and Hungary in agro-industrial sectors has already yielded tangible positive results. Obviously, the role of Soviet-Hungarian cooperation in the agro-industrial sphere will continue to grow, thus ensuring an ever more balanced and dynamic development of agricultural production in our countries, fuller satisfaction of their needs for foodstuffs, and a higher living standard for their population. There are appreciable reserves for such cooperation, and their utilization is a major item deepening the integration ties between the Soviet Union and the Hungarian People's Republic in the current five-year period.

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## AGRO-ECONOMICS AND ORGANIZATION

### PRIVATE PLOT POTENTIAL IN VINNITSKAYA OBLAST

Kiev RADYANS'KA UKRAYINA in Ukrainian 12 May 82 p 3

[Article by V. Temnyy, chairman, executive committee, Vinnitskaya Oblast Soviet of People's Deputies: "The Domestic Field".]

[Text] The following words are from comrade Lenin's book "Virgin Soil": "Every possibility should be utilized in our country, each piece of land, in order to increase agricultural production everywhere, to provide 'meat and potatoes' for our common table." These words remind us of the ancient agricultural truth: the soil is our invaluable wealth, it provides us with prosperity, our strength and glory. Both the wide kolkhoz field and the subsidiary plot will be bountiful only when they feel the hardworking hands of a good farmer and his genuine interest.

The subsidiary plot is a small "domestic" field. However, in Vinnitskaya Oblast alone the area of these plots amounts to about 190,000 hectares. It can accommodate the two largest rayons in the oblast, Mogilev-Podolskiy and Shargorodskiy, on whose farms there are more than 100,000 large horned cattle, more than 70,000 pigs, 404,000 fowl and in addition they yield grain, feed, industrial crops, vegetables and fruit.

Therefore the oblast executive committee and the executive committees of local soviets of people's deputies continuously make sure that the land allocated to rural workers for private plots yields the best returns, contributing towards raising the people's prosperity. This issue is particularly urgent today when the procurement program is being developed.

Following the CC CPSU and USSR Soviet of Ministers decision "On additional measures for increasing agricultural output production on citizens' private subsidiary farms" Vinnitsa area party, Soviet and agricultural organs strengthened their attention to these issues. Only in the last two years oblast local soviets conducted more than a thousand rural meetings at which an increase in production output on worker subsidiary farms and surplus sale to the state were discussed. Issues dealing with further development of private subsidiary farms were also discussed at sessions of local soviets.

A great deal of explanatory and propaganda work among constituents was done by deputies. On their initiative a number of wonderful plans were started in the oblast directed towards highly effective utilization of the private plot land fund, increasing the numbers of livestock and fowl in private subsidiary farms, and the sale of milk, meat, eggs and other products to the state.

Last year the oblast executive committee approved the initiative of the Lypovetskiy Rayon deputies and population who took upon themselves to increase the sale of agricultural surplus to the state considerably. The initiators held to their word. They sold the state 1512 tons of milk, 3.3 million eggs, 3630 tons of potatoes and a lot of other production.

A socialist competition among village and settlement soviets for an increase in production purchase from the population also helps the further development of citizen subsidiary farms.

As a result of the above the private subsidiary farm portion in Vinnitsa area procurement resources has recently increased considerably and now amounts to 66 percent of potatoes, almost 5 percent of milk and more than 20 percent eggs procured in the oblast.

Not only organizational work contributes to these figures; rural workers obtain a lot of assistance from local Soviet and agricultural organs. For example, last year the Vinnitsa area rural population was sold more than two million rubles worth of various agricultural implements, mineral fertilizer, poison chemicals, and also 4560 tons concentrated feed. This was through cooperative trade, not counting other sources of supply.

At the recommendation of oblast executive committee an agronomic zootechnological and zooveterinary service was organized in the Vinnitsa area to service private subsidiary farms.

Kolkhozes and sovkhoses were also active in promoting the development of rural population private subsidiary farms. They sold the people more than 325,000 young pigs, overfulfilling their task by more than one and a half times, almost 10 million fowl, and 175,500 tons of succulent feed. More than 27,000 hectares of pastures and 8,300 hectares of hay mowing area were allotted to kolkhoz and sovkhos workers for grazing their livestock.

Oblast rayons maintain active controls to make sure that all private plots are used. There is concern everywhere for timely plot tilling, fertilizing and high-yielding agricultural crop sowing. If necessary kolkhozes will change the citizen's seed potatoes for tubers of a higher yield variety which is especially important in our oblast, they also sell cabbage, tomato and fruit tree seedlings.

But there are also quite a few problems in this matter. For example, large tractors are assigned by kolkhozes to plow gardens which they

trample, ruining trees. When large tractors plow small plots the kolkhozes also suffer losses. However, since the farms do not have small tractors and appropriate plows or other equipment, they have no choice except to send these powerful machines to private plots.

What are the chances for this situation to change?

Last year at the oblast exposition of technological achievement visitors could see the model of a miniature tractor for tilling private plots created by master of production instruction at the Vinnytsa vocational school No. 4, O.A. Ostapenko. Specialists from the Kalynivskiy machine building plant became interested in the model. Today a collective of enterprise designers is working on an experimental model of that type of machine. The oblast executive committee, of course, met the Kalynivskiy machine building plant builders initiative with approval and will do whatever it can to arrange for serial production of such tractors and also a set of implements for tilling private plots. However, this is not enough to solve the problem of providing the rural population with small machinery. Union and republican planning organs and appropriate ministries and departments should be more actively concerned with this problem too.

The oblast executive committee and local Soviet organs took a straight course towards putting into life the principle: the private farm is a common concern. Where this principle is adhered to the results are much better. The village Mali Krushlyntsi can serve as an example. It is about twelve kilometers from the village to the oblast center. However, most village inhabitants work at the kolkhoz imeni Lenin. The executive committee of the village soviet of people's deputies and kolkhoz administration were able to encourage the citizens to expand their private subsidiary farms. People raise livestock and various fowl, and gladly sell agricultural product surplus to the state. At the beginning of last year the issue of further development of village residents' subsidiary farms was discussed at a session of the village soviet. Prior to this deputies and activists visited all households, ascertained what livestock was kept, and made agreements for production sale to the state. Therefore, the discussion at the session was purposeful and businesslike. Decisions made at the session were carried out in a businesslike manner also. The kolkhoz allocated a pasture for citizen livestock, established five milk-receiving points, allotted transport for milk delivery, and provided animal owners with coarse feed. As a result Mali Krushlyntsi inhabitants last year sold the state 1600 quintals of milk, more than 600 kg for each cow.

It is also noteworthy that during last year only the number of cows in the village grew by fifty. By the end of the five-year plan it is expected that each household will have a cow. In only one year the kolkhoz sold almost 2,000 pigs to the citizens, three to each household. Half of them are being fattened by agreement and will return to the farm weighing 120-130 kg. More than 20,000 various fowl were also sold to the population.

Goal directed work towards the further development of private subsidiary farms is also carried out by the executive committee of the Tartats'ke village soviet of people's deputies in Chechel'nytskiy Rayon, many local soviets in Tyvrivskiy, Kozyatynskiy, Teplytskiy and Tomashpil'skiy Rayons where an average of 300-320 kg milk was procured from each cow.

Yet, we must acknowledge that the possibilities of citizen private subsidiary farms in our oblast are not yet fully utilized. The basic reasons are insufficient attention by some agricultural organs and their managers to providing the population with feed for their livestock, with pastures and hay mowing plots.

To solve this problem, the executive committee requested that kolkhozes and sovkhoses distribute feed for worker private subsidiary farms in a specific order. This year it is planned to sell to the population 440,000 tons of coarse feed and 640,000 tons of succulent feed. This will definitely promote the increase of cattle raising product output on the farms of rural workers.

Shortcomings are still allowed in the organization of agricultural product surplus procurement, especially milk. Milk collection points have not been established everywhere. Where they do exist, essential apparatus is lacking, also chemical agents, washing and disinfecting means. Therefore, provisioners are not always able to determine milk fat percentage correctly or the production quality. Local Soviet and farm organs are taking steps to extend the network of milk collection points, providing personnel and transport. However, they alone cannot solve the problem of lack of apparatus and chemical agents. They need help from the Ministry of Meat and Dairy Industry USSR.

Meat procurement from the population needs further improvement. It is enough to say that even now there is no uniform procurement price for this important production in the republic. State procurement organizations of the Ministry of Meat and Dairy Industry accept poultry at one price, consumer cooperative enterprises at another. Kolkhozes and sovkhoses have their own price. Of course, the livestock owner will sell it to whoever pays more. Because of this irregularity the extent of meat purchases from the population by state procurement organizations decreased considerably in the last few years because in this system the purchasing price per poultry kg was the lowest. Appropriate ministries and departments, republican planning and financial organs should study this issue thoroughly and adjust the purchasing prices for meat appropriately.

In the second year of the 11th Five-Year Plan Vinnitsa area workers took upon themselves to sell to the state 24,500 tons of milk, 11,200 tons of meat, 50 million eggs, 60,000 tons of potatoes, 58,600 tons of fruit and berries, 1100 tons of vegetables and quite a lot of other production from private subsidiary farms. To achieve



these tasks successfully, local soviets of people's deputies, their agricultural organs want to do everything possible to raise the yield from each hundredth of land, increasing the numbers of live-stock and fowl in subsidiary farms of the population. To create the most favorable conditions for people to farm private plots is to promote an increase in the sale of agricultural products to the state!

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## AGRO-ECONOMICS AND ORGANIZATION

### ORGANIZATIONAL CONCERNS OF UKRAINIAN SUBSIDIARY ENTERPRIZES

Kiev RADYANS'KA UKRAYINA in Ukrainian 28 Apr 82 p 2

[Article by V. Drymchenko, secretary, Kirovogradskaya Oblast Party Committee, Communist Party of the Ukraine: "A Cooperative Created by Enterprises."]

[Text] I recall the controversy that erupted among factory managers after they were instructed to develop subsidiary enterprizes for agricultural production. How is it that we're supposed to raise livestock also, questioned some. Alright, said others, we'll build hog farms, but where will we get the feed? Where will we put the zootechnicians, veterinarians, animal breeders?... There were quite a few of these questions and all were legitimate. We had to find the answers, we understood that this was the only way to achieve positive results in realizing party directions for the creation and development of subsidiary farms at industrial enterprises.

Such enterprises, of course, have no arable land. This is the chief obstacle on the way to establishing agrarian workshops in the city because feed production is impossible without pastures. The effort to have some allotted in present Kirovograd area conditions, where each hectare is accounted for, would only cause delay. Also, is it possible for each factory to create its own agricultural workshop, there are no moderate and small enterprises in Kirovograd. Will this matter be economically convenient?

We as party workers also considered this problem. This was the picture we saw: Even if the land allotment issue were resolved, if we were to close our eyes to the high cost of meat (after all it is meant for internal consumption, for our factory dining rooms) and follow the way of building subsidiary farms for each factory, how would this affect the city's social development? We could visualize the suburbs of Kirovograd covered with primitive hog farms. We could hear the squeals of hungry animals as their factory care takers search somewhere for their feed. Someone estimated that for 15 farms (this many city enterprises had to participate) at least 60 watchmen would have to be hired. What about qualified veterinarians, hog and calf attendants? Where do you find them?

A conference of oblast center party agricultural personnel was called. These problems were discussed. Together, a solution was found. Near Kirovograd there is the suburban sovkhos "Zorya" which belongs to the oblast trade administration. It is supposed to provide the population with vegetables and pork. Meat is produced by raising substandard livestock. The sovkhos borrows pigs weighing 70 kg from state procurement organizations, feeds them 100 days to a weight of 125 kg and then again delivers them to the state. The meat increase obtained goes to dining rooms, restaurants and stores. This particular farm, then, was selected for consideration. The sovkhos has 1400 hectares of land, 1200 of which are arable. There is a possibility to utilize food left-overs as feed here. There are experienced specialists at the sovkhos: chief zootechnician V.H. Rudyk, chief engineer V.V. Fomenko, fattening operators L.I. Koval'ova, V.M. Dudchenko, F.M. Klymova and M.V. Harbuz, who continuously achieve high increases in animal weight.

This will also be a good place for early vegetables. Hothouse specialist, communist H.P. Kostyrin is well known far beyond the sovkhos limits. Last year he grew 29 kg of cucumbers on one hothouse square meter.

The sovkhos is headed by the energetic and competent Ye. H. Talpa, which is also an important consideration for a serious and complicated matter such as the cooperation of subsidiary farms of enterprises in different branches.

These were the reasons given favoring the cooperative. Today, we can already discuss how this idea is realized. At the sovkhos "Zorya" a farm now exists for 6,000 hogs which was built with headship assistance. Last year the first 575 tons of meat were obtained here or 21 percent more than the planned goal. The average daily animal weight increase reaches 410 grams. Lidiya Ivanivna Koval'ov and her group achieve a 474 gram daily weight increase.

A large contribution to the success of sovkhos livestock growers was also made by industrial enterprise collectives and the city population. First of all, the farm uses cheap feed - food left-overs from worker and public dining rooms and housing for a total of 41.5 percent of the feed ration specific weight. Next, the headship, or collectives of industrial enterprises in Leninskiy Rayon of Kirovograd city last summer procured 1100 tons of wild growing grasses from which 200 tons of grass meal were obtained. Quite a good harvest of grain and perennial grasses was raised by sovkhos workers on their fields. Having a powerful feed shop and machine unit for preparing grass meal, the farm not only provides feed for its own livestock, but also exchanges vitamin granules and mixed feed.

The material basis established and also properly arranged headship relations became the foundation for further development. Along with the new farm, five more sections are growing, a boiler house, feed

kitchen and other structures. This will be a highly mechanized complex for pork production. When it goes into effect the sovkhos will annually provide 1430 tons of meat and 6000 piglets. The specific thing about these structures is that they are built at the expense and often through the efforts of the city industrial enterprise collectives.

Taking out a loan at the state bank or obtaining funds at their ministries, the "Chervona Zirka" radio and dosage machinery factory, and the production association "Drukماش" transferred them to the construction customer, the sovkhos "Zorya", "Henpidryadnykom" /general contract committee/ became "Oblmizhkolhospbud" /oblast interkolkhos construction/ which also put in its part of funds into construction. Enterprise specifications on equipment and farm materials were provided to this organization. This is an important step. Because of it funds allocated to oblast kolkhoses were left untouched. There is a lot of work going on in the construction lot. Complex construction is ahead of schedule. We hope to put it into effect ahead of schedule also. In addition to construction workers, there are also sovkhos workers here as well as specialists from the factory cooperative. These enterprises are also producing feed pipes for the sovkhos and are making cast-iron grates and pumps. All of this will be credited to the cooperative.

What are the benefits for the enterprises-partners?

The production received is divided among them in proportion to the contribution made during construction. I used the word "production" deliberately rather than "pork". Enterprise cooperation on the basis of sovkhos "Zorya" is not limited to the construction of a hog fattening complex. Thus, the maintenance and repairs factory of the Ukrainian repair trust constructed summer feed lots for the fattening of young animals of neat cattle and in a month and a half last year obtained an increase of 4.4 tons of beef. Factories of the UkrSSR Ministry of Light Industry constructed and are continuing to build vegetable hothouses. The combine "Kirovograd Heavy Construction" will build housing for sovkhos workers. In all, a complex program has been put into effect developing multi-branch subsidiary farming based on cooperation of industrial enterprise collectives.

Vegetables as well as meat are divided among these collectives in accordance with their contributions, and are also sent to worker dining rooms, nurseries and dispensaries.

The oblast committee, city committee and the Leninskiy Rayon party committee maintain full control over the course of construction. We feel this matter is party concern, it is an inseparable part in the solution to the provisions problem.

A temporary party group has been established and is active at the construction headed by I.I. Vashchenko, party committee secretary,

oblast interkolkhoz construction. Sovkhoz builders and workers employed in setting up the equipment are part of this group.

Seeing the benefits of industrial enterprise cooperation in the creation of subsidiary farms, we decided to develop this matter further. In the future, we will first of all strengthen the sovkhoz feed basis. There will be an increase in the use of food left-overs in animal feed rations. "Zorya's" fields of perennial grasses will be irrigated with biologically purified sewage.

There is a branch of the "Zorya" sovkhoz in Svitlovods'k. A primitive farm where about 300 pigs were raised for public dining rooms was transferred to this branch. Last year 11 city enterprises on the Dnepr united their efforts to build a hog fattening complex there for 1200 animals and have already obtained 58 tons of meat for worker dining rooms. This year their pork production will reach 140 tons.

Certain collectives in the mining area of Aleksandriya are also cooperating in their subsidiary farming. At the Ulyanivka settlement 300 heads of neat cattle are being fattened for sugar factory dining rooms. A common subsidiary farm is being constructed at the expense of the oblast sugar industry production association. Soon efforts will be made towards setting up a fattening center for the oblast consumer association in the Shostakivka settlement.

Of course, an association of subsidiary farms is not the only way. If the collective from a given enterprise wants to establish a farm of its own, it is not forced to cooperate.

A specialized kolkhoz for raising pork, for example, is being started by the Pobugskiy nickel plant, but it would be impractical for this distantly located plant to cooperate with anyone.

Directing factory and plant managers towards the development of subsidiary farms we say: Organize your own agricultural shops as you see fit, so that there will be meat and vegetables. But cooperation offers the best perspective. Go out to "Zorya" and see for yourself.

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## AGRO-ECONOMICS AND ORGANIZATION

### UKRAINIAN PRIVATE SUBSIDIARY UNITS

#### Meat Procurement Advanced

Kiev SIL'S'KI VISTI in Ukrainian 30 Apr 82 p. 2

[Article by A. Oleynykov]

[Text] Krym is the all-union health center. These are the specific qualities of our area. During the vacation season the peninsula's population doubles and this creates some difficulties in providing food for everyone. In addition to state resources the consumer cooperative tries to utilize all reserves for increasing meat purchase, production and processing. In recent years the extent of meat procurement increased one and a half times. Last year 9256 tons were bought from the population compared to the 7700 planned. This type of result was achieved for the first time. Our provisioners get credit for this. Some of the better provisioners are: A.S. Pyrov from the Oktyabrskiy procurement office, A.I. Shendryk from Mozdolnenskiy, F.K. Biba from Nyzhn'ogorskiy, V.T. Tykhonyuk from Hervomayskiy each procuring 250-300 tons of meat products. The Krymskaya Oblast consumer association was the winner in the socialist competition of Ukraine's cooperators.

This year it is planned to markedly increase meat purchase from subsidiary farms of kolkhoz employees, workers and officials. For this reason we are conducting a persistent search for reserves to supplement our meat resources. Today our agreements with the population are basically longterm.

Domestic rabbit breeding has increased a lot in the oblast. Last year 235 tons of this dietetic meat were purchased from the population. But we are not limited to purchases only, rabbit growers are provided continuous assistance. Seventeen thousand pedigree rabbits were sold to the population to replenish livestock.

Following the example of Odesskaya Oblast cooperators we are making agreements with the population for fattening cattle and fowl, providing them with feed. We have at our disposal 11,000 tons of mixed feed, also enough young animals for realization. Last year, for example, the rural population took in 150,000 pigs and 6.7 million poultry.



An improvement in the organization of meat purchases from the population is only one way of solving the problem. Another equally important reserve of supplementing meat reserve is the establishment of fattening centers directly within the consumer cooperative organizations. In recent years the scope of this work has doubled. In Pervomayskiy Rayon, for example, a subsidiary farm was established on which each year up to a thousand pigs are fed. Three years ago a mechanized hog fattening center was put into effect here accomodating 700 animals. A team of three takes care of the animals: Nina Volodymyrivna, Vasyl' Andriyovych and Volodymyr Andriyovych Kalenskyy. Last year daily hog weight increase amounted to 487 grams, today it has reached 528 grams with 5.1 quintals of feed units expanded per quintal of weight increase. Food left-overs amount to 40 percent of feed specific weight. This fattening center collective fulfilled its yearly goal in pork production ahead of time.

At the Pervomayskiy Rayon consumer association a whole fattening complex is being set up. Along the pigpen a structure has been built for 300 head of horned cattle, a farm for water swimming fowl and a sheep farm for 500. The complex also has its own feedshop, slaughterhouse and refrigerators.

While increasing meat production we are also solving the problem of meat processing especially making sausage products. If at the beginning of the Tenth Five-Year Plan the cooperative produced only a little more than 100 tons of sausage products per year, in 1981 it produced 828 tons. There are ten sausage shops within the oblast consumer association, but this is not enough and we are building three more large, modern shops to raise sausage production to 1700-1800 tons per year.

Last year almost 150,000 fowl were purchased from the population. This is not the limit, but there were some difficulties in its processing. State combine capabilities for this product are insufficient in our oblast. Local fowl processing shops should be available, not necessarily large but thoroughly mechanized. Unfortunately, there are no plans for such shops and this delays fowl production in the consumer cooperative system.

In my opinion, the consumer cooperative could produce much more poultry and also beef, pork, lamb if certain problems were resolved. The first is enough machines and equipment. We understand that agricultural technology must be concerned first of all with kolkhozes and sovkhoses. But we would like for this organization to help the consumer cooperative a little more, especially in acquiring feed steamers, boilers and transport. I will not even speak of a medium cultivator-tractor which is very difficult to find available for use.

The second problem is the feed basis for livestock raising. We make an effort to utilize fully all wastes - we sow oats, barley and alfalfa. We procure hay. But to grow feed we need land. This is

a complex issue. We understand that each hundredth of arable land is strictly accounted for. And yet small plots of low production land which are not being tilled can be found in each rayon. We approached the oblast executive committee with the request that they assign such plots to the consumer cooperative. The executive committee granted our request and issued an appropriate decision. Yet this decision is being fulfilled rather slowly: So far, we have been allotted 74 hectares, an average of 3.5 hectares per rayon consumer association. This is very little since each rayon consumer association should have 10-15 hectares. We hope that this problem will be resolved positively in the near future.

The second year of the five-year plan was started quite well. In January and February 1235 tons of meat were purchased (1200 were planned), 262 tons more than was bought during the same period in 1981. From two months of hog fattening 668 quintals of weight increase were obtained with a goal of 634.

In the light of the tasks set before the consumer cooperative by the 26th party congress to improve servicing of rural workers, we will try to solve to the best of our abilities also this important problem - the purchase of meat and meat production for the rural population and industrial centers. For example, we intend to open within the oblast at least 120 rural receiving-procurement centers. Also planned are livestock and poultry slaughter stations with sausage shops and refrigerators and with kitchens for the use of slaughter waste. We have a goal of setting up processing shops in all rayon consumer associations.

Today a socialist competition is in progress in all production areas and in procurement and trade organizations of the oblast consumer association under the slogan "Sixty outstanding weeks for the 60th anniversary of USSR". Krym's cooperators will put all their efforts towards fulfilling the 26th CPSU Congress goals with honor.

#### Ukrainian Citizen Commentary

Kiev RADYANS'KA UKRAYINA in Ukrainian 13 Apr 82 p 2

[Article by A. Vasyl'yeva and H. Vorotnyuk]

[Text] "Kolkhozes and sovkhoses were and will remain at the foundation of socialist agriculture," stated comrade L.I. Brezhnev at the 26th CPSU Congress. "But this does not mean at all that private subsidiary farm possibilities should be disregarded. Experience shows that these farms can render substantial assistance in the production of meat, milk and other products. Orchards, vegetable gardens, fowl and livestock which belong to the workers are part of our general wealth."

The CPSU Central Committee and the USSR Council of Ministers found it imperative to approve a decision at the beginning of last year

entitled "On additional measures to increase agricultural production output on citizens' private subsidiary farms." What has been done in our villages, worker settlements, and cities about putting into life measures anticipated in the decision? What should still be done to increase the returns from private plots and "domestic farms"? To examine these issues "RADYANS'KA UKRAYINA" editors circulated a special subject questionnaire among the readers.

After its publication, the editorial office began receiving letters marked "Your Subsidiary Farm." The letters were written by kolkhoz, sovkhoz, and industrial enterprise workers, officials and retired people. Of course, not all letters answer all questionnaire questions. People write about things which concern them most. Facts, cited in the correspondence, thoughts and suggestions expressed by the authors, provide some idea about the accumulated experience in raising the effectiveness of private subsidiary farms, and also define the problems.

"You must know the price of the cow..."

These are words by a kolkhoz pensioner M. Kulyk from the village of Koshmanivka, Mashivskiy Rayon, Poltavskaya Oblast. She writes: I live alone, my grown sons live elsewhere, but I still keep a cow. People often ask me why I bother, but these are my thoughts: As long as I have the strength I will keep it up because the people and I need it. In the last two years I sold the state 4600 kg of milk, a cow and a steer for meat, or about 8 quintals in live weight and 3500 eggs..." Motrya Fedorivna then tells about what encourages her and her fellow villagers to have a private subsidiary farm. Kolkhoz imeni Shevchenko, where she worked for many years, allots to those who keep cows coarse feed, beet tops, allocates pastures and haymowing plots. The village has a well organized system of surplus milk purchase, everyday a cart comes by each household where there is a cow. Mixed feed is sold to village inhabitants as supplementary trade. "I feel that in these conditions only a lazy person will refuse to keep livestock," ends the letter by M. Kulyk. "You must know the price of a cow..."

Yes, not only the people who own the cow should know her price but also workers in those organizations on whom successful development of population private subsidiary farms is dependent. Experience shows that only where the local soviets of people's deputies, kolkhozes, sovkhozes and other agricultural enterprises keep this important matter within their sight do people eagerly take up domestic farming selling surplus to the state. I. Bondarenko from Pereshchepyne settlement, Novomoskovskiy Rayon, Dnepropetrovskaya Oblast states as follows: "Last year almost two times more milk and one and a half times more meat was bought from our settlement than anticipated. I think this was achieved thanks to the village soviet, its deputies and membership who conducted a tremendous organizational and mass political work among the population..." Many local rural workers

raise large horned cattle and pigs according to agreements with local kolkhozes "Zorya" and imeni Dzerzhynskiy. These farms, in turn, offer people a lot of help in developing their "domestic farms."

But, unfortunately, all local organs of power and farm managers do not always exhibit appropriate interest in seeing that as many people as possible keep cows, pigs and fowl. This is written in letters from Kievskaya, Kirovogradskaya, Ivano-Frankovskaya and a number of other oblasts. "But you cannot grow fodder on private plots, you must plant potatoes and vegetables for yourself there." "Pigs cannot be bought in the villages and in the market they're very expensive." "Incubator chicks are still available, but you have to go to the rayon center to get them. But no one is selling ducklings or goslings." These letter excerpts point to specific reasons why citizen private subsidiary farms do not grow in some areas and even decrease the returns. "About four years ago the sovkhos "Peremoha" plowed the pasture where people let their livestock graze. Now this area is completely covered with weeds," writes veteran worker A. Syroyizhko from Pokrovka village in Kazankivskiy Rayon, Nikolaevskaya Oblast. "There are meadows on both sides of the river Vil'shanka. A lot of hay was harvested there previously. Now these meadows are muddy, covered with thick shrubbery and neither the kolkhoz nor the people derive any benefits from them." This was written by T. Burlyuk from the village Ryabushka in Lebedinskiy Rayon, Sumskaya Oblast.

In a number of questionnaire answers writers suggest what should be done for strengthening the feed basis of "domestic farms", and creating other essential conditions for their development. First of all, mixed feed trade everywhere should be transferred from cities to villages. This would eliminate people's worries about acquiring and transporting livestock feed. In a number of instances, state the letters, haymowing plots are divided unequally among the rural population; they are allotted without consideration whether an individual keeps a cow or not...

In recent years in a number of oblasts, especially Volynskaya, Lvovskaya, Odesskaya and several others there has been an expansion of livestock and poultry raising and fattening by the population through cooperation with kolkhozes and sovkhoses. According to agreements kolkhoz or sovkhos farms provide "domestic farms" with young animals and feed, organize zooveterinary animal supervision, and the subsidiary farmers fatten livestock and fowl, then sell it to kolkhozes and sovkhoses on a mutually convenient basis.

This form of private subsidiary farm development is evaluated positively in many letters to the editors.

But we also read as follows: "We haven't even heard of such agreements"; "This matter is only in an embryonic stage here"; "People

aren't eager to form agreements with kolkhozes for raising livestock because later they don't get any help." These are lines from letters by I. Polishchuk (Richka village, Koretskiy Rayon, Rovenskaya Oblast), T. Barylka (Rohy village, Man'kivskiy Rayon, Cherkasskaya Oblast), N. Rybal'chenko (Zaymyshche village, Shchors'kiy Rayon, Chernigovskaya Oblast).

The following, then, is directed to the attention of executive committees of local soviets of people's deputies and farm managers:

At the 26th CPSU Congress and the 26th Ukrainian Communist Party Congress a positive evaluation was given to the experience of livestock fattening in private subsidiary farms through cooperation with kolkhozes and sovkhozes, it was also recommended by an appropriate decision of the CC CPSU and the USSR Council of Ministers to expand this form of cooperation, giving assistance to kolkhoz and other workers, officials and other citizens in providing them with young stock and fowl, feed and in the allotment of pastures, haymowing plots and other services. Please analyze how these decisions are put into effect in your area, and utilize all measures possible to remove shortcomings and introduce effective forms of citizen private subsidiary farm development.

"Where is the tractor for the garden?"

There are quite a few problems in domestic livestock raising but these are not the only worries people with private subsidiary farms have. One of them is tilling the garden. The complication arises from the fact that there are few horses now on farms and subsidiary plots are plowed with tractors. Many letter writers state that machinery for this purpose is allotted only after all field work has been finished in kolkhozes or sovkhozes. In the fall gardens are plowed when there is frost already, in the spring when it is almost summer. Can you expect a bountiful harvest after that? People look for solutions: Some hire "holiday" workers paying them exorbitant sums, others take to the spade and dig up the garden manually. "Subsidiary plots could be tilled along with kolkhoz areas," thinks M. Baranovs'kyi from Khmelys'ka village in Pidvolochys'kiy Rayon, Ternopol'skaya Oblast, "there is a lot of equipment in kolkhozes today. But farm managers must be concerned with the returns from subsidiary plots of rural workers and not treat it as a private matter for each kolkhoz worker."

Letter authors also note the following: Tilling subsidiary plots with a powerful tractor means losses for farms and people. This giant (with a four-part plow) has no place to turn in a garden. It wields damage to orchard trees and fencing. "Sometimes tractor operators plow up clods of earth the size of footstools. Since the plowing is late there is no way to break up these chunks. The only solution is to take a spade and dig up the plowed plot."

Many letters state: The industry should speed up its production of small tractors for private subsidiary farms. Also, private subsidiary farms need not only new machinery but simple equipment too - horse harrows and plows, scythes and spades, portable sprayers, extension ladders for orchard growers and equipment for picking fruit. There were questions about these also, where do you get them, who makes them, where are they sold. People complain about the quality of certain farm tools available, especially spades and scythes.

Authors of many letters believe that the time has come to set up village rental centers where for a fee people could borrow machinery and tools for working their subsidiary plots and for preparing feed. The establishment of such centers was, in fact, anticipated in the CC CPSU and USSR Council of Ministers decision.

A few years ago in a number of kolkhoz communal farms especially in Lerkasskaya Oblast special sections for tilling subsidiary plots were established. Perhaps, ask the readers, using them as an example but with a better technological basis, organizations could be formed also in other areas which would provide for the needs of the rural population in tilling subsidiary plots.

On many subsidiary plots the farming is of poor quality. Agrotechnological and zootechnological know-how should be disseminated among the population also by mass information media, especially television. This was described by H. Lapshyn from the city of Brovariv in the Kiev area, S. Khomenko from the village Nova Osota in Oleksandrivskiy Rayon, Kirovogradskaya Oblast, Ya. Muzyka from Kiev and others. I. Zahorul'ko from Kozyn village, Myronivskiy Rayon, Kievskaya Oblast adds: "Kolkhoz agronomists and zootechnicians should also take an interest in the rural population's private subsidiary farms. They should be concerned that many of them have a poor harvest and insufficiently productive livestock."

The republic's ministries of agriculture, sovkhoses, fruit farming, local industries, consumer service, trade, UkSSR State Committee of Agriculture, Ukrainian consumer association and oblast executive committees should note:

The Minskiy tractor plant and the Kutayiskiy plant for small size tractors have begun the production of small tractors for subsidiary plots; a feed chopper for "domestic farms" is being developed by the Novograd-Volynskiy plant of agricultural machinery. When these and other machines and equipment are available for sale, how many will there be, and what will be their realization order? What will be produced at local enterprises and when? How will simple tools be provided to private farms this year and in years to come? When and where will rental centers open with machines and equipment for domestic farms? What specific measures are taken by soviets of people's deputies and local agricultural organs to strengthen citizen assistance in the development of private subsidiary farms?



"Come for the production"

Authors of many questionnaire replies discuss in detail the problems in selling production surplus from their subsidiary farms and the work of the consumer cooperative in this direction. In many places arrangements are satisfactory: Receiving centers were established in villages, surplus production is bought directly from private farms, payments for sold items are made promptly. "It's good that the consumer cooperative provides mixed feed to those who sell milk as part of supplementary trade. This is help to the 'domestic farms'" states a letter from Vinnitsa area.

However, a considerable number of letters contains serious comments on the cooperator work and its need for improvement. "Unfortunately provisioner work cannot satisfy," writes I. Hlukhen'kyi from Nizhyn in the Chernigov area. "Let's consider the village Tereshykha in Bakhmatskiy Rayon which I know well. It is situated in a low lying area and in poor weather in the fall you can neither walk nor ride to the crossroads. But it's in the fall that people have surplus products for sale. Yet there is no one to buy. Provisioners do not come here. How inefficient! Or, let's talk about fruit. A bountiful harvest of apples and pears does not bring happiness rather additional bother. There is only one procurement center for several villages. It's ten to fifteen kilometers to get there. Transportation is hard to come by. So the fruit rot under the trees, or perhaps are fed to the cattle. To avoid this, consumer cooperative provisioners should find out from the rural population beforehand what production and how much they will be able to sell, and then provide the transport to collect the surplus."

The problem of delivering the products to the procurement points is a concern to a number of readers from various oblasts. "When you want to sell something, then rent a truck or take it on a cart to the provisioner because he'll never get here," complains I. Pustovit from the village of Nehrebka in Korsun'-Shevchenkiy Rayon in the Cherkassy area. M. Dovzhenko, a cultural worker from Kovpynka village, Novgorod-Siverskiy Rayon in Chernigov area, writes that generally the purchase of surplus production from subsidiary farms is quite well organized, however, during large scale potato procurement the consumer cooperative transport should follow a schedule carefully so that people would know not only the day but also the hour when to expect pickup of "second bread" surplus.

M. Vakulenko from Oliynykova Sloboda village in Belotserkovskiy Rayon, Kiev area thinks that: "To be successful in purchasing production surplus from private subsidiary farms, the consumer cooperative has to provide all provisioners with transport."

In the replies received to the questionnaire "Your Subsidiary Farm" there are quite a few signals about shortcomings in cooperator procurement work which resulted from bad management and a lack of interest.

In one place the provisioner promised to come for fruit but didn't show up. In another area kolkhoz workers cannot get rid of the animals they raised because they have to be taken to the rayon center.

"Perhaps it is convenient for some to deliver livestock to the consumer cooperative on commission, but for many it's impossible," writes hero of the Patriotic War M. Dovhan' from the village Legedzyne, Tal'nivskiy Rayon, in Cherkassy area. "At first you have to go 30 km to Uman' to make arrangements for the delivery of your steer on commission. When you can't find transport for the animal for the day you agreed upon, then you must begin the whole procedure again."

Here is another problem: Cattle breeding production is also purchased from the population by enterprises of the Ministry of Meat and Dairy Industry UkSSR. But if mixed feed is received in rural stores of the consumer cooperative in exchange for milk, for meat it is obtained in the offices of "Zahotskot" [animal procurement]. These offices are tens of miles away from the villages. Surely they could be moved closer to the people, it is one and the same ministry!

The Ukrainian cooperative association and the Ministry of Meat and Dairy Industry UkSSR should note the following:

The people are waiting for definite measures for further improvement in the procurement of products from private subsidiary farms, a settlement of accounts with the population for realized production, and a strict order in supplying "domestic farms" with mixed feed. What will be done in regard to these problems in the near future?

Of course, all the issues touched upon by the letter writers cannot be included here. There is the further development of collective horticulture in cities and worker settlements, the problem of building animal shelters on subsidiary plots, providing orchard growers with seedlings of fruit trees, and many other problems that people are concerned about and which, they hope, will reach the appropriate republican and local organs.

In summary, quite a lot remains to be done for the further development of the population's private subsidiary farms and for the increase in their effectiveness. Matters will be resolved successfully if organizations involved with solving the procurement problem will show an active interest in these farms. Let us remember that gardens, orchards and "domestic farms" are a source of additional income for the rural population, an important reserve for supplementing the country's procurement resources. A good example set by the older generation who are successful in private subsidiary farming teaches the young a respect for work, helps them in selecting a profession. Young boys and girls taught to work in childhood quickly become experts in community fields and farms. This is also very important.

SOWING DATES, BARLEY YIELDS IN KURGANSKAYA OBLAST

Sverdlovsk URAL'SKIYE NIVY in Russian No 4, Apr 82 p 15

/Article by A. Stepanovskikh, assistant professor at the Kurgan Agricultural Institute: "Barley Sowing Periods and Cropping Power"/

/Text/ Each year the farmers are confronted by the same question: when should they commence sowing their spring grain crops and at what depth should the seed be planted? Each spring this subject is fully discussed during the agronomic conferences. By no means is the question concerning the commencement and completion of spring grain crop sowing operations an idle one.

In the case of early sowing periods, the yields are quite often low owing to a deficit of moisture during the first half of the summer and with later sowings -- owing to autumn frosts. In this regard, the honored Academician of VASKhNIL /All-Union Academy of Agricultural Sciences imeni V.I. Lenin/ and twice-decorated Hero of Socialist Labor T.S. Mal'tsev stated: "However well we apply ourselves to agriculture, and particularly to field crop husbandry, we must know beforehand what the two summer months -- June and July -- will be like. Truly, the precipitation which falls during this period determines to a great degree the yields to be obtained and the effectiveness of the sowing period.

The opinion has firmly taken hold in the Zaural'ye region that the best sowing period for barley is late May and early June.

When barley is sown during late periods, the campaign against weeds during pre-sowing cultivation is facilitated. Barley sown during the first decade in June has a crop weediness that is 40-50 percent lower than a sowing carried out during the 15-20 May period. Barley sown during later periods has a shorter growing season, by 10-20 days, than earlier sowings and this is of particular value when organizing a plan: the harvesting of barley can commence earlier than that for wheat. These scientific conclusions are borne out by operational practice. At the Makushino GSU /state strain-testing station/, on the average for the 1975-1977 period, the cropping power for Krasnoufimskiy-95 barley sown on 30 May was 22.6 quintals per hectare and Odesskiy 36 -- 43, whereas a 15 May sowing produced a cropping power for the latter which did not exceed 31.4 - 30.7 quintals per hectare. In 1978, following a 30 May sowing, a cropping power of 38.2 quintals per hectare was obtained for the Krasnoufimskiy 95 variety, Odesskiy 36 -- 38.3, Lucha -- 41.6 quintals per hectare and following a 15 May sowing -- 19.6, 23.1 and 23.6 quintals per hectare respectively.

In 1980, following a 15 May sowing at the Makushino GSU, Lucha produced 18 quintals of grain per hectare, Donetsk 8 -- 25.4 quintals per hectare and following a 30 May sowing -- 25.4 and 33.1 quintals per hectare respectively. Following a 15 May sowing at the Mokrousovskiy GSU, Donetsk 8 produced 25.8 quintals per hectare and following a 30 May sowing -- 29.1 quintals per hectare.

During the 1973-1977 period at the Argayash GSU in Chelyabinskaya Oblast, a barley sowing conducted prior to 7 May produced a cropping power equal to 29.4 quintals per hectare; 25 May and 30 May -- 34.6 quintals per hectare.

Studies carried out during the 1968-1977 period at the training-experimental farm of the Kurgan SKhI and in 1975 at the Pamyat' Chkalova Kolkhoz in Shchuchanskiy Rayon in Kurganskaya Oblast prove that the sowing periods and the depth of seed placement exert a substantial effect on the vulnerability of barley to smut diseases. Here the principal role is played by temperature and soil moisture content during the period from sowing to the appearance of shoots.

In 1968, at the training farm of the Kurgan SKhI [Agricultural Institute], following an 11 May sowing of Viner variety barley with a seed placement depth of 5-6 centimeters, the contamination by black wheat smut amounted to 7.25 percent, a 21 May sowing -- 5.24 and a 1 June sowing -- 2.95 percent. It was also noted that the contamination of the seed increased to 9.82 percent as the seed placement depth was increased (an 11 May sowing at a depth of 8-9 centimeters).

An analysis of the grain yields revealed that the best sowing period is late, with a seed placement depth of 5-6 centimeters -- the highest yield of grain was obtained -- 22.2 quintals per hectare. For a shallow placement (2-3 centimeters) and also an excessively deep seed placement (8-9 centimeters), the cropping power decreased compared to the optimum (5-6).

The lowest percentage of covered and black wheat smut was observed in 1971 (2-3) when Omskiy 13709 barley was sown on 4 June with a seed placement depth of 2-3 centimeters and the greatest (9.3) -- when the sowing was carried out on 16 May to a depth of 8-9 centimeters. The highest yield was obtained (33.1 quintals per hectare) from a sowing on 4 June at a seed placement depth of 5-6 centimeters.

On the average for the 1972-1974 period, the contamination of barley sown on 15 May by covered smut amounted to 7.2 percent, on 25 May -- 5.1 and on 1 June -- 3.2 percent; the grain amounts harvested were 26.4, 28.1 and 28.9 quintals per hectare respectively.

During the extremely dry year of 1975, the contamination of barley by covered smut increased not only from early sowing periods to late ones, but also with an increase in the depth of seed placement. Following a sowing on 22 May to a depth of 5-6 centimeters, 1.83 percent of the plants were contaminated by covered smut, compared to a 5 June sowing -- only 0.52 percent. The greatest grain yields were obtained from late sowing periods: 31 May -- 19.4 quintals per hectare, 5 June -- 20.9 and 17-22 May -- 10.1-15.2 quintals per hectare. In 1975, at the Pamyat' Chkalova Kolkhoz in Shchuchanskiy Rayon, a sowing of Omskiy 13709 barley on 15 May produced 5.25 percent contamination in the plants by covered smut, 20 May -- 2 percent and 25 May -- 1.5 percent. No covered smut was detected following a 1 June sowing.

The contamination of barley by wheat smut also decreased from early sowing periods to late ones. In 1976, at the training farm of the Kurgan Agricultural Institute, a 10 June sowing of Krasnoufimskiy 96 barley produced 0.3 contamination by wheat smut in the plants and a 20 May sowing -- 5.2 percent. The greatest yield of grain, just as in previous years, was obtained from a sowing of barley in late May and early June. Following a sowing on 5 June, the grain yield amounted to 39.4 quintals per hectare, whereas a 15 May sowing -- 33.6 quintals per hectare.

Similar data was obtained in 1977. A 20 May sowing of barley produced 0.97 percent contamination by wheat smut in the plants and a 5 June sowing -- 0.05 percent. Smut was entirely absent following a 10 June sowing.

The examples cited confirm once again that under the conditions which prevail in the Zaural'ye region the best sowing period for barley is late -- the end of May and the beginning of June, with a seed placement depth of 5-6 centimeters. The sowing of barley during late periods promotes a reduction in losses caused by smut diseases and it raises cropping power.

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## TILLING AND CROPPING TECHNOLOGY

### SPRING BARLEY YIELDS IN KIRGHIZSTAN

Frunze SEL'SKOYE KHOZYAYSTVO KIRGIZII in Russian No 4, Apr 82 p 25

/Article by M. Tilekmatov, senior scientific worker at the Naryn support base of KirgNPOZ and T. Nasirov, senior scientific worker: "Spring Barley Fertilization and Yields"/

/Text/ During the past few years, as a result of having raised the overall culture of farming and having introduced more productive varieties of spring barley into operations on the kolkhoz and sovkhoz fields, the workers in Kochkorskiy Rayon have succeeded in raising considerably the cropping power and gross yields of their grain crops. Last year, for example, an average of 45.4 quintals of grain per hectare were obtained from each of 13,134 hectares.

However, the production level achieved for forage grain is still not meeting all of the requirements of public livestock production. No more than 50 percent of the requirements for internally produced forage grain is being satisfied.

For the purpose of ascertaining the possibility of increasing the production of grain, an experiment was carried out on the fields of the Tendik Sovkhoz, at a height of 1,800 meters above sea level, the goal of which was to study the influence of the periods and methods for applying nitrogen-phosphorus fertilizers on the yields obtained from the Kombayner spring barley variety. The soil of the experimental plot -- light brown and characterized by a low content of mobile forms of nitrogen and phosphorus. Thus the grain crops respond readily to applications of nitrogen and phosphorus fertilizers, which promote an increase in the weight of the grains, in the productive bushiness and in the height of the plants and raise the grain content of an ear. The largest amount of productive stalks and the highest grain content in an ear occurred during those variants of the experiment in which the nitrogen-phosphorus fertilizers were applied during plowing at the rate of  $N_{80}P_{90}$  kilograms per hectare and to drill rows --  $N_{10}P_{30}$  kilograms per hectare and also when applied during plowing  $N_{20}P_{90} + N_{10}P_{30}$  to drill rows and  $N_{60}$  in a top dressing during the tillering phase.

When high dosages of nitrogen-phosphorus fertilizers ( $N_{90}P_{120}$  kilograms per hectare of active agent) were applied, the yields obtained from the Kombayner barley variety, on the average for a period of 3 years, amounted to 48.2-58.7 quintals per hectare, with the increase compared to a variant without fertilizers amounting to 15.5-26 quintals per hectare. Especially high increases in yield were obtained in the variant in which the nitrogen-phosphorus fertilizers were applied fractionally --



TABLE

Effect of Periods and Methods for Applying Nitrogen-Phosphorus Fertilizers on Spring Barley Yields (average for 1977-1979)

Variants of experiment	Grain yield, quintals per hectare	Increase in Yield	
		Quintals per hectare	%
Control (less fertilizers)	32.7	-	-
N <sub>90</sub> P <sub>120</sub> during plowing	52.0	19.3	60.0
N <sub>90</sub> P <sub>120</sub> during disking	48.2	15.5	47.4
N <sub>90</sub> P <sub>105</sub> + N <sub>10</sub> P <sub>15</sub> to drill rows	54.6	21.9	67.0
N <sub>80</sub> P <sub>90</sub> + N <sub>10</sub> P <sub>30</sub> to drill rows	58.7	26.0	79.5
N <sub>70</sub> P <sub>90</sub> + N <sub>20</sub> P <sub>30</sub> to drill rows	54.5	21.8	66.6
N <sub>90</sub> P <sub>105</sub> + P <sub>15</sub> to drill rows	53.4	20.7	63.3
N <sub>90</sub> P <sub>90</sub> + P <sub>30</sub> to drill rows	54.2	21.5	65.7
N <sub>20</sub> P <sub>90</sub> + N <sub>10</sub> P <sub>30</sub> to drill rows + N <sub>60</sub> during tillering phase	57.1	24.4	74.6

to the drill rows and in a top dressing. The greatest effect was achieved from the use of fertilizers at the rate of N<sub>80</sub>P<sub>90</sub> during plowing + N<sub>10</sub>P<sub>30</sub> to the drill rows and N<sub>20</sub>P<sub>90</sub> during plowing + N<sub>10</sub>P<sub>30</sub> to the drill rows + N<sub>60</sub> top dressing during the tillering phase. Over a 3 year period, the grain yields from these variants increased an average of 24.4-26 quintals per hectare compared to control and amounted to from 57.1 to 58.7 quintals per hectare.

It is apparent from the data in the table that a further increase in the proportion of nitrogen and phosphorus applied to the drill rows did not promote an increase in cropping power.

Based upon the results of 3 years of study, N<sub>90</sub>P<sub>120</sub> per hectare is considered to be the optimum norm for applying nitrogen-phosphorus fertilizers in behalf of barley in the zone of the internal Tyan'-Shan' region. Of this amount, it is recommended that 80 kilograms of nitrogen and 90 kilograms of phosphorus be applied during plowing. A mandatory method is that of pre-sowing applications to the drill rows of nitrogen fertilizers at the rate of 10 kilograms of nitrogen and phosphorus fertilizers 15-30 kilograms P<sub>2</sub>O<sub>5</sub> per hectare.

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